



CANADA YEAR BOOK

1969

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Moonrise over Parliament Hill

Photo by
Brigitta von dulong
Ottawa



CANADA YEAR BOOK

1969

OFFICIAL STATISTICAL ANNUAL
OF THE RESOURCES, HISTORY,
INSTITUTIONS AND SOCIAL AND
ECONOMIC CONDITIONS OF
CANADA

*Published by Authority of the
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PREFACE

The 1969 edition of the Canada Year Book continues a long series of annual publications giving authoritative statistical and other information on almost every measurable phase of Canada's development. The Year Book has, through the years, summarized the statistical data made available by the Dominion Bureau of Statistics and presented it along with legislative and other pertinent information to give concisely, within the covers of one volume, the story of Canada's social and economic progress.

Each chapter of the Year Book contains the latest information procurable at the time of printing but, since the production process extends over almost a year, by the time the volume is off the press later data on some subjects may be available from the DBS or the department concerned. Readers in need of the most recent information available should therefore address themselves to the appropriate DBS Division or Government Department, as the case may require.

In addition, it should be noted that the present volume was prepared during a year in which a major reorganization of Federal Government departments was taking place and for this reason the reader may notice some inconsistency in departmental designations and functions between earlier and later chapters. However, the list of thumbnail sketches of departmental, agency and corporation functions included in the Appendix was prepared after the Government Organization Act, 1969 was passed by Parliament and is therefore accurate as of April 30, 1969, as is the Government Organization Chart inserted facing p. 108.

In addition to the normal updating of all subject matter, feature articles or specially prepared chapter material has been included on "Recent Trends in Urbanization and Metropolitan Growth", pp. 156-165; a summary of the agricultural statistics of the 1966 Census, pp. 515-523; "Fuels in Canada", pp. 637-645; "The First Decade of the Seaway", pp. 841-845; and "Canada's Trade with the European Economic Community", pp. 977-985.

The volume was produced in the Year Book Division of the Dominion Bureau of Statistics by Miss Margaret Pink, Assistant Director and Editor of the Canada Year Book, and the Year Book Division staff under the direction of Pierre Joncas, Director of the Division. The charts and maps, except where otherwise indicated, were prepared by or under the direction of Laurent Tessier of the Drafting Unit. Credits for photographic illustrations used throughout the publication are listed on p. vii.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible, either to the persons or to the public service concerned.

Walter E. Duffett.

DOMINION STATISTICIAN

DOMINION BUREAU OF STATISTICS
OTTAWA, APRIL 1969

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SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:—

- . . figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- - amount too small to be expressed or where “a trace” is meant.
- ^p preliminary figures.
- ^r revised figures.

WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed; an exception is the ton where, unless otherwise stated, the short ton of 2,000 lb. is meant.

Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. Where reference is made to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals 0.96 U.S. fluid ounce and one Imperial gallon equals 1.2 U.S. gallons.

1 Imperial pint=20 fluid ounces	1 short ton=2,000 pounds
1 U.S. pint=16 fluid ounces	1 long ton=2,240 pounds
1 Imperial quart=40 fluid ounces	1 barrel crude petroleum=35 Imperial gallons
1 U.S. quart=32 fluid ounces	1 ounce avoirdupois=0.91146 ounce troy (oz.t.)
1 Imperial gallon=160 fluid ounces	1 statute mile=5,280 feet
1 U.S. gallon=128 fluid ounces	1 nautical mile=6,080 feet
1 Imperial proof gallon=1.36 U.S. proof gallon	

The following weights and measures are used in connection with the principal field crops and fruit; 2.3 bu. of wheat are required to produce 100 lb. of flour.

	<i>Pounds per Bushel</i>		<i>Pounds per Bushel</i>
Grains—		Fruits (standard conversions)—	
Wheat.....	60	Apples.....	45
Oats.....	34	Pears, plums, cherries, peaches,	
Barley and buckwheat.....	48	grapes and apricots.....	50
Rye, flaxseed and corn.....	56	Strawberries and raspberries	
Rapeseed and mixed grains.....	50	(per qt.)	1.25
All others.....	60		

Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, all figures are for calendar years except where otherwise indicated in text or table headings.

Miscellaneous

- Maritime Provinces=Prince Edward Island, Nova Scotia and New Brunswick
- Atlantic Provinces=Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
- Central Canada=Quebec and Ontario
- Prairie Provinces=Manitoba, Saskatchewan and Alberta
- Btu.=British thermal unit (coal)
- Mcf.=thousand cubic feet (gas)
- n.e.s.=not elsewhere specified
- n.o.p.=not otherwise provided for
- psi. (atomic research)=pounds-force per square inch (pressure)
- D.B.H. (forestry)=diameter at breast height.



North of Montreal lie the famous Laurentian Hills, part of the southern edge of the great Canadian Shield. Scraped and gouged and flattened by the layers of ice that once covered them, they have been left with a unique and striking beauty, delightful to behold.

Photo by
John H. Molson
Montreal

CHAPTER I.—PHYSIOGRAPHY AND RELATED SCIENCES

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.*

PART I.—GEOGRAPHY AND GEOLOGY

Section 1.—Physical Geography

Canada is a vast land, the largest in the Western Hemisphere and the second largest in the world. It occupies the northern half of the North American Continent with the exception of Alaska and Greenland and in its almost 3,852,000 sq. miles of territory encompasses many contrasts of topography, climate, vegetation and resources. Most of the population lives within 200 miles of the southern border where the climate is generally moderate and where great resources of land, forest, mine and water have long been under development and utilization. The southernmost point of the country is Middle Island in Lake Erie, at 41°41' N, marking the limit of the southern Ontario peninsula which thrusts deep into the eastern United States and is almost semi-tropical in character. In a straight line 2,875 miles north, past the treeline and far into the arctic tundra is Cape Columbia on Ellesmere Island, Canada's northernmost point, at 83°07' N. From east to west at the widest point, the straight-line distance is 3,223 miles—from Cape Spear, Newfoundland, at 52°37' W, to Mount St. Elias, Yukon Territory, at 141° W.

Geographical situation places Canada at the crossroads of contact with the principal powers and some of the most populous areas of the world. In the south, Canada borders on the United States for a distance of 3,986.8 miles. In the north, the Arctic Archipelago

penetrates far into the polar basin, making Canada neighbour to northern Europe and the Union of Soviet Socialist Republics. In the east, the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with Britain and France. In the west, the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides departure points for crossings of the North Pacific Ocean between continental North America and the Far East. The length of the Yukon-British Columbia border adjoining Alaska is 1,539.8 miles.

Canada's area of 3,851,809 sq. miles may be compared with those of the Soviet Union at 8,649,539 sq. miles,* China (including Taiwan) at 3,705,408 sq. miles,* the United States of America (including Alaska and Hawaii) at 3,615,211 sq. miles,* and Brazil at 3,286,488 sq. miles.* It is more than 40 times the size of Britain and 18 times the size of France. This immense size, which seems to afford much scope for settlement, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8 p.c. and the productive forest land 25 p.c. of the total. The population, estimated at 20,744,000 as at June 1, 1968, may be compared with 196,920,000† for the United States (1966) and with 83,175,000† for Brazil (1966).

1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land area as agricultural, forested, etc., is given on p. 25 and total area by tenure on p. 26.

Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
Newfoundland.....	143,045	13,140	156,185	4.1
Island of Newfoundland.....	41,184	2,195	43,359	1.1
Labrador.....	101,881	10,945	112,826	3.0
Prince Edward Island.....	2,184	—	2,184	0.1
Nova Scotia.....	20,402	1,023	21,425	0.6
New Brunswick.....	27,835	519	28,354	0.7
Quebec.....	523,860	71,000	594,860	15.4
Ontario.....	344,092	68,490	412,582	10.7
Manitoba.....	211,775	39,225	251,000	6.5
Saskatchewan.....	220,182	31,518	251,700	6.5
Alberta.....	248,800	6,485	255,285	6.6
British Columbia.....	359,279	6,976	366,255	9.5
Yukon Territory.....	205,346	1,730	207,076	5.4
Northwest Territories.....	1,253,438	51,465	1,304,903	33.9
Franklin.....	541,763	7,600	549,353	14.3
Keewatin.....	218,460	9,700	228,160	5.9
Mackenzie.....	493,225	34,265	527,490	13.7
Canada.....	3,560,238	291,571	3,851,809	100.0

The mileages in Table 2 are another indication of the size of Canada. They show the length of transportation facilities required between the larger cities, between outlying industrial communities built up around large mining or smelting projects and the nearest cities, and between northern outposts and the supplying cities. In this table, mileage given is for the major means of transport used between the points concerned; air mileages are given for most transcontinental distances.

* United Nations Statistical Yearbook, 1967.

† United Nations Population and Vital Statistics Report, Apr. 1, 1968.

2.—Travel Distances between Certain Cities and Other Points of Interest in Canada

NOTE.—The dash used in this table indicates that the distance concerned is of no particular interest. In each case the mileage given is for the type of travel most generally used—road (H), rail (R), air (A) or water (W); air mileages are given for most transcontinental distances. Water and air routes are given in nautical miles.

From	To	Halifax	Montreal	Quebec	Ottawa	Toronto	Winnipeg	Edmon- ton	Van- couver
		miles	miles	miles	miles	miles	miles	miles	miles
St. John's, Nfld.....	W	531	W 1,043	W 904	A 1,137	W 1,336	—	—	A 3,381
Charlottetown, P.E.I.....	H	151	—	—	A 638	—	—	—	—
Halifax, N.S.....	—	—	H 824	H 657	A 625	H 1,164	—	—	A 2,945
Fredericton, N.B.....	H	298	H 526	H 359	A 455	—	—	—	—
Saint John, N.B.....	H	276	H 593	H 426	H 719	H 933	—	—	—
Chibougamau, Que.....	—	—	—	R 608	—	—	—	—	—
Montreal, Que.....	R	840	—	H 167	H 126	H 340	A 1,170	A 1,938	A 2,460
Quebec, Que.....	—	—	H 167	—	A 242	H 507	A 1,421	—	A 2,596
Schefferville, Que.....	—	—	R 357	[R 357	—	—	—	—	—
Sept Îles, Que.....	—	—	W 430	W 291	—	—	—	—	—
Fort William, Ont.....	—	—	W 430	W 291	—	—	—	—	—
Hamilton, Ont.....	—	—	W 1,055	W 1,194	R 878	W 762	R 419	R 1,219	R 1,892
Ottawa, Ont.....	—	—	H 382	H 549	H 290	H 42	—	—	—
Sudbury, Ont.....	A 1,137	—	H 126	H 293	H 311	H 248	A 1,077	A 1,843	A 2,254
Toronto, Ont.....	—	—	—	—	H 244	H 244	R 945	—	—
Churchill, Man.....	W 1,188 ¹	—	H 340	H 507	A 244	—	A 941	A 1,709	A 2,233
Lynn Lake, Man.....	—	—	—	—	—	—	R 723	—	—
Winnipeg, Man.....	—	—	A 1,170	—	A 1,077	A 941	—	R 800	R 1,473
Regina, Sask.....	—	—	R 1,764	—	R 1,653	R 1,587	R 356	R 512	R 1,117
Saskatoon, Sask.....	—	—	—	—	—	—	R 470	R 330	R 1,095
Uranium City, Sask.....	—	—	—	—	—	—	—	A 399	A 877
Calgary, Alta.....	—	—	—	—	—	R 2,063	R 832	R 194	R 641
Edmonton, Alta.....	—	—	R 2,159	—	R 2,041	R 2,007	R 800	A 164	R 765
Fort St. John, B.C.....	—	—	—	—	—	—	—	—	A 460
Kitimat, B.C.....	—	—	—	—	—	—	—	A 353	R 728
Prince Rupert, B.C.....	—	—	—	—	—	—	—	R 956	W 420
Vancouver, B.C.....	A 2,945	A 2,460	R 3,042	R 2,770	A 2,233	A 1,171	R 765	—	W 477
Victoria, B.C.....	A 2,916	—	—	A 2,301	—	—	—	—	W 81
Dawson, Y.T.....	—	—	—	—	—	A 979	A 274	A 573	—
Whitehorse, Y.T.....	—	—	—	—	A 2,842	—	H 1,283	A 868	—
Frobisher, N.W.T.....	—	A 1,131	—	—	—	—	A 1,698	A 2,158	—
Inuvik, N.W.T.....	—	A 2,884	—	—	—	—	A 1,872	A 1,228	A 1,688
Yellowknife, N.W.T.....	—	—	—	—	A 2,498	—	A 1,222	A 578	A 1,047

¹ Via Strait of Canso.

Politically, Canada is divided into ten provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources, and upon such resources, as related to topography, position and climate, is based the economy of the province. The resources of the Yukon and Northwest Territories, because of the remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the Federal Government.

The main physical and economic characteristics of each province and territory are described in some detail in the 1963-64 Year Book; this article is available in reprint form. Also, it should be mentioned that the economic development of the country as a whole, based in the first instance on physical features and later on other factors, has formed regions quite distinct from the political divisions. These economic regions are described in an article appearing in the 1962 Year Book at pp. 17-23.

The Canadian Permanent Committee on Geographical Names, administered by the Department of Energy, Mines and Resources, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

Subsection 1.—Inland Waters

Every year about 8,000,000,000,000 tons of water falls on Canada in the form of rain and snow. Much of it is evaporated but a large amount drains back to the oceans as surface run-off, forming rivers and lakes along its route. This surface water, ceaselessly moving, is the dominant feature of the Canadian environment. It has been estimated, in fact, that about 7.6 p.c. of Canada's total area is covered by fresh water (Table 1). There are probably more lakes here than in any other country in the world—so many that they have never been counted. As much as one seventh of all the fresh, liquid, surface water in the world is contained within Canada's boundaries.

A large portion of this water is contained in the Great Lakes. About 37 p.c. of their total areas is in Canada, as shown in Table 3. These lakes include some of the largest bodies of fresh water in the world, so large that they have measurable, although very slight, tides.

3.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above Sea Level	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior.....	602.23	383	160	1,301	32,483	11,524
Michigan (U.S.A.).....	580.77	321	118	923	22,400	—
Huron.....	580.77	247	101	748	23,860	15,353
St. Clair.....	575.30	26	24	21	432	270
Erie.....	572.40	241	57	209	9,889	4,912
Ontario.....	245.88	193	53	775	7,813	3,849

Other large lakes in Canada, ranging in area from 12,300 to 9,500 sq. miles, are Great Bear Lake, Great Slave Lake and Lake Winnipeg. Apart from these, notable for size, there are countless smaller lakes scattered over the major portion of Canada lying within the Canadian Shield. For example, in an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes; in an area of 5,294 sq. miles south-west of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

4.—Elevations and Areas of Principal Lakes, by Province

NOTE.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water. All elevations are in feet above mean sea level. "Total" refers to the area of the whole lake; "part" refers to the area within the designated province or territory.

Province and Lake	Elevation	Area	Province and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Newfoundland—			Quebec—continued		
Deer.....	17	24	Baskatong (reservoir).....	{ HW 732 LW 677 }	109
Gander.....	82	49	Bienville.....	1,400	392
Grand.....	284	205	Burnt (Brûlé).....	1,590	56
Melville.....	sea level	1,133	Cabonga (reservoir).....	{ HW 1,185 LW 1,169 }	66
Michikamau.....	1,521	566	Caniapiscau.....	1,850	210
Red Indian.....	520	70	Champlain (total, 360) part....	95	18
Victoria.....	932	15	Chibougamau.....	1,253	88
Nova Scotia—			d'Iberville.....	790	260
Bras d'Or.....	tidal	360	Deux Montagnes (des).....	73	63
New Brunswick—			Eau Claire (à l').....	790	535
Grand.....	tidal	65	Evans.....	760	180
Quebec—			Goûland.....	810	125
Abitibi (total, 369) part.....	868	56	Indian House.....	890	125
Albanel.....	1,289	172	Kempt.....	1,372	75
			Kipawa.....	884	125

4.—Elevations and Areas of Principal Lakes, by Province—continued

Province and Lake	Elevation	Area	Province and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Quebec—concluded			Manitoba—concluded		
Lower Seal.....	860	130	Kamuchawie (total, 57) part.....	1,157	31
Manicouagan.....	645	110	Kipahigan (total, 60) part.....	968	29
Manouane.....	1,340	100	Kiskitto.....	696	65
Matagami.....	765	88	Kiskittogisu.....	709	99
Minto.....	460	485	Kississing.....	920	138
Mistassini.....	1,220	840	Manitoba.....	814	1,817
Nichieum.....	1,737	150	Moose.....	838	525
Olga.....	785	50	Namew (total, 80) part.....	873	8
Payne.....	430	230	Northern Indian.....	760	150
Pipmuacan (reservoir).....	HW 1,305	90	Nueltin (total, 850) part.....	875	270
	LW 1,275		Oxford.....	612	155
Plétipi.....	HW 1,660	138	Paint.....	615	54
Quinze, des.....	LW 867	55	Pelican (west of Lake Winnipegosis).....	838	80
Saint-François, River St.			Playgreen.....	711	257
Lawrence (total, 83) part.....	160	63	Red Deer (west of Lake Winnipegosis).....	875	100
Saint-Jean.....	321	414	Reed.....	915	73
Saint-Louis.....	69	57	Reindeer (total, 2,467) part.....	1,150	371
Saint-Pierre.....	11	142	St. Martin.....	801	125
Simard.....	859	73	Setting.....	737	49
Timiscamingue (total, 121) part.....	HW 589	66	Sipiweesk.....	601	201
	LW 575	75	Sisipuk (total, 103) part.....	919	71
Waswanipi.....	830		Southern Indian.....	835	1,050
Ontario—			Swan.....	850	118
Abitibi (total, 369) part.....	863	313	Talbot.....	845	72
Big Trout Lake.....	697	264	Walker.....	679	62
Dog.....	1,380	61	Waterhen.....	829	90
Eagle.....	1,192	140	Wekusko.....	844	64
Erie (total, 9,889) part.....	572	4,912	Winnipeg.....	713	9,465
Huron, including Georgian Bay			Winnipegosis.....	833	2,103
(total, 23,860) part.....	580	15,353	Woods, Lake of the (total, 1,695)		
Lac la Croix (total, 55) part.....	1,186	25	part (reservoir).....	1,060	69
Long.....	1,025	75	Saskatchewan—		
Lower Manitou.....	1,216	60	Amisk.....	964	168
Mille Lacs, Lac des.....	1,496	103	Athabasca (total, 3,120) part.....	699	2,180
Minnitaki.....	1,177	72	Besnard.....	1,278	72
Nipigon.....	865	1,870	Black Birch.....	1,517	54
Nipissing.....	643	350	Candle.....	1,621	56
Ontario (total, 7,313) part.....	245	3,849	Canoe.....	1,415	78
Rainy (total, 360) part (reservoir).....	HW 1,108	291	Churchill.....	1,382	213
	LW 1,103		Cold (total, 138) part.....	1,756	46
Red.....	1,166	71	Cree.....	1,570	446
St. Clair (total, 432) part.....	575	270	Cumberland.....	871	98
St. Francis, River St. Lawrence			Deschambault.....	1,072	209
(total, 88) part.....	154	25	Doré.....	1,506	248
St. Joseph.....	1,226	187	Île à la Crosse.....	1,380	166
Sandy.....	904	270	Kamuchawie (total, 57) part.....	1,157	26
Seul (reservoir).....	1,172	539	Kipahigan (total, 60) part.....	966	31
Simcoe.....	718	283	Lac la Loche.....	1,460	76
Stout (Berens River).....	1,035	50	Lac la Plonge.....	1,476	90
Sturgeon (English River).....	1,342	110	Lac la Ronge.....	1,198	552
Superior (total, 32,483) part.....	602	11,524	Last Mountain.....	1,606	89
Timagami.....	965	91	Montreal.....	1,608	162
Timiskaming (total, 121) part.....	HW 589	55	Namew (total, 80) part.....	872	72
	LW 575		Nemeiben.....	1,259	63
Trout (English River).....	1,294	156	Peter Pond.....	1,382	302
Woods, Lake of the (total, 1,695) part (reservoir).....	1,060	953	Pinehouse.....	1,262	159
Manitoba—			Primrose (total, 188) part.....	1,964	236
Athapuskow.....	956	104	Quill.....	1,703	180
Beaverhill.....	651	70	Reindeer (total, 2,467) part.....	1,150	2,096
Cedar.....	830	517	Saskatchewan.....	1,827	171
Clearwater (Atikameg).....	855	112	Sisipuk (total, 103) part.....	919	32
Cornacant.....	840	174	Smoothstone.....	1,573	110
Croes (Nelson River).....	679	274	Tazin.....	1,130	156
Dauphin.....	853	200	Wollaston.....	1,300	796
Dog.....	811	84	Alberta—		
Gods.....	585	319	Athabasca (total, 3,120) part.....	699	940
Goose.....	922	53	Beaverhill.....	2,202	80
Granville.....	850	181	Buffalo.....	2,566	56
Island.....	744	550	Calling.....	1,949	55

4.—Elevations and Areas of Principal Lakes, by Province—concluded

Province or Territory and Lake	Elevation	Area	Territory and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Alberta—concluded			Yukon Territory—concluded		
Claire.....	699	545	Kluane.....	2,525	184
Cold (total, 138) part.....	1,756	92	Kusawa.....	2,200	56
Lac la Biche.....	1,784	94	Laberge.....	2,100	87
Lesser Slave.....	1,892	461	Tagish (total, 130) part.....	2,152	52
Mamawi.....	695	64	Teslin (total, 142) part.....	2,239	84
Peerless.....	2,269	75			
Primrose (total, 188) part.....	1,964	8	Northwest Territories—		
Sullivan (variable).....	2,651	62	Aberdeen.....	261	475
Utikuma.....	2,115	85	Artillery.....	1,190	153
			Aylmer.....	1,230	340
British Columbia—			Baker.....	30	975
Adams.....	1,334	52	Clinton-Colden.....	1,226	253
Atlin (total, 299) part.....	2,192	298	Dubawnt.....	764	1,600
Babine.....	2,332	194	Faber.....	753	163
Chilko.....	3,842	75	Franklin.....	49	175
Eutsuk.....	2,817	96	Gras, de.....	1,365	345
François.....	2,345	91	Great Bear.....	511	12,275
Harrison.....	30	87	Great Slave.....	513	10,980
Kootenay.....	1,745	163	Hardisty.....	643	107
Kotcho.....	1,970	31	Hottah.....	640	377
Lower Arrow.....	1,370	59	Kaministiquia.....	320	360
Okanagan.....	1,123	136	La Martre.....	870	685
Ootsa.....	2,666	50	Mac Kay.....	1,415	250
Quesnel.....	2,380	100	Maguse.....	..	540
Shuswap.....	1,142	120	Marian.....	513	90
Stuart.....	2,230	139	Nuelin (total, 850) part.....	875	580
Tagish (total, 130) part.....	2,152	78	Nutawit.....	..	350
Takla.....	2,260	102	Pelly.....	501	331
Teslin (total, 142) part.....	2,250	58	Point.....	1,229	295
Upper Arrow.....	1,401	88	Rae.....	692	74
			Schultz.....	250	110
Yukon Territory—			Thaolintoa.....	496	160
Aishihik.....	3,001	107	Yathkyed.....	461	860
Atlin (total, 299) part.....	2,192	1			

Lake storage is very valuable—it represents water that can be drawn upon in time of drought to be replaced in time of plenty. Lakes are natural regulators of river flow. But the true measure of a country's water wealth is the amount of water that can be depended upon to be replaced each year—the amount that remains after evaporation has been subtracted from precipitation. This is the amount that flows in its rivers. Here, too, Canada is very fortunate. The combined mean annual flow of all its rivers has been estimated at 3,500,000 cu. feet per second—about 9 p.c. of the total flow of all the rivers of the world. Set against a population of less than 1 p.c. of the world total, this constitutes a very generous endowment of fresh water.

It is understandable that Canada's history of settlement and industrial development has been moulded by the influence of its great rivers. The country's first industry, the fur trade, flourished because of the ready access to the interior provided by the St. Lawrence River, the Great Lakes and their tributary streams and the many other great and small waterways. Early exploration and settlement depended on this same natural means of access. The plentiful water supplies of the flat and fertile plains of southern Ontario and Quebec attracted an industrious farming people. The river-borne transportation of lumber and later the power of water-driven turbines were vital factors in the building of the country's industrial base. Today, more than ever, water is the key to Canada's development, supplying the renewable energy required for industrial growth, providing easy and relatively cheap transport for bulk raw materials and playing a vital part in the processing of those materials.

Table 5 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indention of names; thus, the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

5.—Lengths of Principal Rivers and Their Tributaries

Drainage Basin and River	Length miles	Drainage Basin and River	Length miles
Flowing into the Atlantic Ocean		Flowing into Hudson Bay—concluded	
St. Lawrence (to head of St. Louis, Minn.).....	1,900	Eastmain.....	510
Ottawa.....	696	Fort George (to Nicheum Lake).....	480
Gatineau.....	240	Attawapiskat.....	465
du Lièvre.....	205	Kazan.....	455
Coulonge.....	135	Nottaway (to head of Waswanipi).....	400
Madawaska.....	130	Waswanipi.....	190
Rouge.....	115	Nelson (to head of Lake Winnipeg).....	400
Mississippi.....	105	Rupert.....	380
Petawawa.....	95	Red (to head of Lake Traverse).....	355
South Nation.....	90	George (to Hubbard Lake).....	345
Dumoine.....	80	Moose (to head of Mattagami).....	340
North.....	70	Abitibi.....	340
North Nation.....	60	Mattagami.....	275
Saguenay (to head of Peribonca).....	475	Missinabi.....	265
Peribonca.....	280	Hayes.....	300
Mistassini.....	185	Winisk.....	295
Ashuapmucuan.....	165	Whale.....	270
Saint-Maurice.....	325	Harricawaw.....	250
Mattawin.....	100	Great Whale.....	230
Manicouagan (to head of Racine de Bouleau).....	310	Leaf.....	165
Outardes.....	270		
Bersimis.....	240	Flowing into the Pacific Ocean	
Richelieu.....	210	Yukon (mouth to outlet of Tagish Lake).....	1,587
St. Francis.....	165	Yukon (Int. Boundary to head of Nisutlin).....	714
Chaudière.....	120	Porcupine.....	448
Via the Great Lakes—		Pelly.....	330
French (to head of Sturgeon).....	180	Stewart.....	331
Sturgeon.....	110	Teslin.....	215
Grand.....	165	White.....	161
Thames.....	163	Columbia (total).....	1,150
Spanish.....	153	Columbia (in Canada).....	459
Trent.....	150	Kootenay (total).....	407
Mississagi.....	140	Kootenay (in Canada).....	276
Nipigon (to head of Ombabika).....	130	Fraser.....	850
Moir.....	60	Thompson (to head of North Thompson).....	304
Thessalon.....	40	North Thompson.....	210
Saint John.....	418	South Thompson (to head of Shuswap).....	206
Romaine.....	270	Nechako.....	287
Natashquan.....	241	Stuart (to head of Driftwood).....	258
Moisie.....	210	Chilcotin.....	146
Churchill.....	208	West Road (Blackwater).....	141
Exploits.....	153	Skeena.....	360
Naskaupi.....	152	Bulkley (to head of Maxam Creek).....	180
Canairiktok.....	139	Stikine.....	335
Eagle.....	138	Alsek.....	260
Miramichi.....	135	Nass.....	236
Marguerite.....	130		
Gander.....	102	Flowing into the Arctic Ocean	
Flowing into Hudson Bay		Mackenzie (to head of Finlay).....	2,635
Nelson (to head of Bow).....	1,600	Peace (to head of Finlay).....	1,195
Saskatchewan (to head of Bow).....	1,205	Finlay.....	250
South Saskatchewan.....	865	Smoky.....	245
Red Deer.....	385	Little Smoky.....	185
Bow.....	315	Parsnip.....	145
Belly.....	180	Athabasca.....	765
North Saskatchewan.....	760	Pembina.....	210
Red (to head of Sheyenne).....	545	Liard.....	755
Assiniboine.....	590	South Nahanni.....	350
Souris.....	450	Petitot.....	295
Qu'Appelle.....	270	Fort Nelson.....	260
Winnipeg (to head of Firesteel).....	475	Hay.....	530
English.....	330	Peel (to head of Ogilvie).....	425
Churchill.....	1,000	Arctic Red.....	310
Beaver.....	305	Slave.....	258
Koksoak (to head of Caniapiscu).....	660	Twitya.....	200
Caniapiscu.....	575	Back.....	605
Seyern (to head of Black Birch).....	610	Coppermine.....	525
Albany (to head of Cat).....	610	Anderson.....	430
Dubawnt.....	580	Horton.....	275

The map facing this page shows the major drainage basins of Canada. Probably the most important is the Atlantic drainage basin, being dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 678,000 sq. miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence, the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield—a rugged, rocky, plateau region over the edge of which tumble many swift-flowing tributary rivers. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest in area and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson, is completely developed for hydro-electric power but development of the Nelson itself is just beginning. The two branches of the Saskatchewan River, tributary to the Nelson, drain the great agricultural region of the mid-west and are now the sources of important irrigation projects.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area in the three westernmost provinces of approximately 700,000 sq. miles. Except for a 16-mile portage in Alberta, barge navigation is possible from the end of steel at Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro-electric developments and in season swarm with salmon returning inland to their spawning grounds. The Fraser River rises in the Rocky Mountains and toward its mouth flows through a rich agricultural area. The Columbia is an international river which has a total fall of 2,650 feet during its course and has thus a tremendous power potential. Although a considerable portion of the United States potential has been developed, Canadian development is relatively slight. The Yukon River is also an international river but, although the largest on the Pacific slope, is at present relatively unimportant economically.

Subsection 2.—Coastal Waters

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated mileages:—

Mainland—

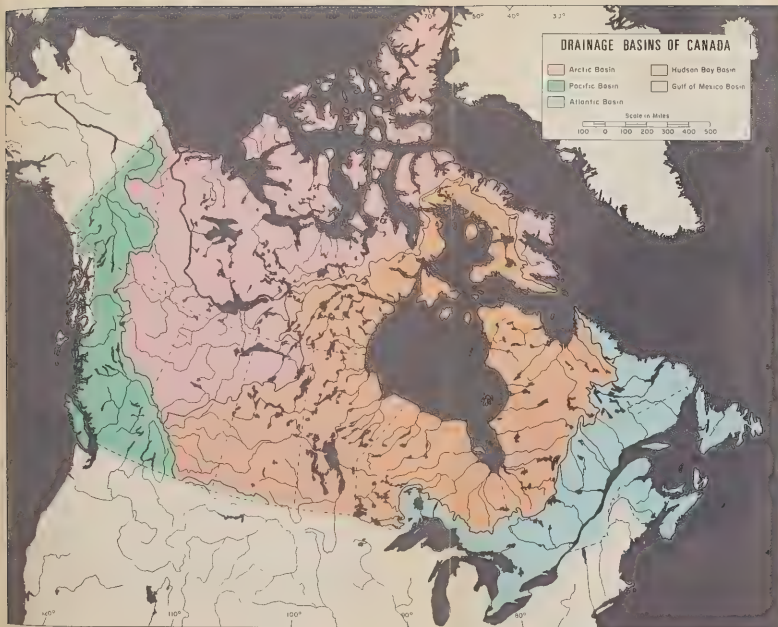
Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

Islands—

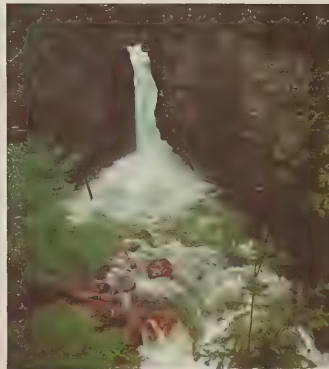
Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor, and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada.

Atlantic.—Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental



Northern shoreline of Lake Superior



Gold Creek waterfall, near Revelstoke, B.C.

to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 50 to 120 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, is of varying depths of from 100 to 200 fathoms before the shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

Arctic.—The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia, where it is about 500 miles wide; north of North America it surrounds the western islands of the Archipelago and extends 50 to 300 miles seaward from the outermost islands.

The topography of the floor of the submerged part of this continental margin is only partly explored but sufficient has been charted to indicate, in common with continental shelves throughout the world, an abrupt break at the oceanward edge to the relatively steep declivity of the continental slope. This slope borders the western side of the Queen Elizabeth Islands and, from it, deep well-developed troughs enter between the groups of islands. Sills across Davis Strait, Barrow Strait and other channels, on which the depth is about 200 fathoms, interrupt the network of deep troughs and separate the Arctic basin from the Atlantic.

That part of the continental shelf bordering the Arctic Ocean in the vicinity of the Queen Elizabeth Islands (see below) is the subject of extensive study. Since 1959 parties based at the joint Canadian-United States weather station at Isachsen on Ellef Ringnes Island have been investigating the oceanography, hydrography, submarine geology, gravity, geomagnetic features and crustal seismic properties of the continental shelf area, carrying out physiographic, hydrological, permafrost and glaciological studies on the islands of the region, mapping the nature, distribution and movement of the sea ice, and running basic topographic control surveys. This work is continuing and should eventually cover all of the unmapped parts of the shelf between Greenland and Alaska. The investigations should yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the bathymetry of the continental

shelf and slope and the straits and sounds of the Archipelago; the topography and structure of the shelf and the nature of its sediments, its underlying rocks and possible mineral resources; the structure and physical characteristics of the northern edge of the North American continental platform and its contact with the Arctic Ocean basin; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the changes in sea level, glaciers, sea ice and climate in the recent geological past.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

Subsection 3.—Islands

The largest islands of Canada are in the North and all experience an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83° 07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north—lying north of the M'Clure Strait—Viscount Melville Sound—Barrow Strait—Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the largest islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

6.—Areas of Principal Islands, by Region

Region and Island	Area	Region and Island	Area
	sq. miles		sq. miles
Arctic Archipelago—		Arctic Archipelago—continued	
Northern Region (Queen Elizabeth Islands)—		Northern Region (Queen Elizabeth Islands)—continued	
Ellesmere.....	82, 119	Prince Patrick.....	6, 081
Devon.....	20, 861	Ellef Ringnes.....	5, 139
Melville.....	16, 369	Cornwallis.....	2, 670
Axel Heiberg.....	15, 779	Amund Ringnes.....	2, 515
Bathurst.....	7, 609	Mackenzie King.....	1, 922

6.—Areas of Principal Islands, by Region—concluded

Region and Island	Area	Region and Island	Area
	sq. miles		sq. miles
Arctic Archipelago—concluded		Hudson Bay and Strait—concluded	
Northern Region (Queen Elizabeth Islands)—concluded		Salisbury.....	312
Borden.....	1,344	Big.....	310
Cornwall.....	1,292	Akpatok (Ungava Bay).....	296
Eglington.....	551	Charlton (James Bay).....	119
King Christian.....	448	Edgell.....	106
Lougheed.....	413	Killinek.....	104
Brock.....	396		
Cameron.....	396	Pacific Coast—	
Byam Martin.....	376	Vancouver.....	12,408
Meighen.....	293	Queen Charlotte.....	3,705
Graham.....	293	Graham.....	2,491
North Kent.....	258	Moresby.....	991
Emerald.....	251	Louise.....	108
Coburg.....	141	Lyell.....	63
Little Cornwallis.....	139	Kunghit.....	52
Baillie Hamilton.....	114	Princess Royal.....	870
		Pitt.....	537
Southern Region—		Banks.....	400
Baffin.....	183,810	King.....	324
Victoria.....	81,930	Porcher.....	199
Banks.....	23,230	Nootka.....	198
Prince of Wales.....	12,830	Aristazabal.....	167
Somerset.....	9,370	Gilford.....	151
King William.....	4,955	Hawkesbury.....	143
Bylot.....	4,200	Hunter.....	136
Prince Charles.....	3,639	Calvert.....	118
Stefansson.....	2,890	Texada.....	117
Air Force.....	596	Swindle.....	109
Wales.....	439	Quadra.....	103
Rowley.....	436	McCauley.....	102
Vansittart.....	386	Gil.....	94
Russell.....	349	Roderick.....	88
Jens Munk.....	330	Gribbell.....	86
White.....	301		
Bray.....	281	Atlantic Coast—	
Foley.....	261	Newfoundland—	
Koch.....	183	Labrador Coast—	
Matty.....	173	South Aulatsivik.....	167
Royal Geographical Society		Okak (total for two).....	113
(the larger of two).....	173	Tunungayualok.....	72
Jenny Lind.....	170	North Aulatsivik.....	53
Crown Prince Frederic.....	170		
Prescott.....	167	Island—	
Loks Land.....	164	Newfoundland.....	43,359
Melbourne.....	149	Fogo.....	95
Tennant.....	118	New World.....	73
Gateshead.....	86		
		Gulf of St. Lawrence—	
Hudson Bay and Strait—		Cape Breton.....	3,970
Southampton.....	15,700	Anticosti.....	3,043
Coxs.....	2,206	Prince Edward.....	2,184
Mansel.....	1,285	Magdalen (total for group).....	88
Akimiski (James Bay).....	1,137	Shippegan.....	59
Belcher (total for group).....	1,118		
Nottingham.....	543	Bay of Fundy—	
Resolution.....	387	Grand Manan.....	55

Subsection 4.—Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 7 in feet above mean sea level.

7.—Principal Heights in each Province and Territory

NOTE.—Certain peaks, indicated by an asterisk (*), form part of the boundary between political divisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication. Elevations are given in feet above mean sea level.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Newfoundland		Ontario	
Long Range Mountains—		Ogidaki Mountain.....	2,183
Lewis Hills.....	2,672	Batchawana Mountain.....	2,142
Gros Morne.....	2,644	Tip Top Mountain.....	2,099
Mount St. Gregory.....	2,251	Niagara Escarpment—	
Gros Paté.....	2,152	Osler Bluff.....	1,675
Blue Mountain.....	2,128	Blue Mountains.....	1,650
Table Mountain.....	1,900-1,950	Caledon Mountain.....	1,400
Blue Hills of Couteau—		High Hill.....	1,163
Peter Snout.....	1,600-1,650	Mount Nemo.....	1,000
Central Highlands—		Manitoba	
Main Topsail.....	1,822	Baldy Mountain.....	2,729
Mizzen Topsail.....	1,761	Porcupine Hills.....	2,700
Torngat Mountains—		Riding Mountain.....	2,000
Cirque Mountain.....	5,160	Saskatchewan	
Mount Cladonia.....	4,725	Cypress Hills.....	4,567 ¹
Mount Eliot.....	4,550	Wood Mountain.....	3,275
Mount Tetragona.....	4,500	Vermilion Hills.....	2,500
Quartzite Mountain.....	3,930	Alberta	
Blow Me Down Mountain.....	3,880	Rocky Mountains—	
Kaumajet Mountains—		*Mount Columbia.....	12,294 ²
Bishops Mitre.....	4,060	The Twins.....	12,085
Finger Hill.....	3,390	Mount Alberta.....	11,874
Nova Scotia		*Mount Assiniboine.....	11,870 ²
(Spot height—Cape Breton).....	1,747	Mount Forbes.....	11,852
Francy.....	1,405	Mount Temple.....	11,628
Nutby Mountain (Cobequid).....	1,204	Mount Kithener.....	11,500
Dalhousie Mountain (Cobequid).....	1,115	*Mount Lyell.....	11,457 ²
North Mountain (4 miles NE of West Bay Road).....	875	*Mount Hungabee.....	11,452
Sporting Mountain.....	675	Mount Athabasca.....	11,400 ²
New Brunswick		*Mount King Edward.....	11,400 ²
Mount Carleton.....	2,690	Mount Brazeau.....	11,388
Moose Mountain.....	1,490	*Mount Victoria.....	11,365 ²
Quebec		*Snow Dome.....	11,320
(Spot height—Torngat Mountains).....	4,500	Stutfield Peak.....	11,320
Appalachian Mountains—		*Mount Joffre.....	11,316 ²
Mount Jacques-Cartier (Shickshocks)....	4,160	*Deltaform Mountain.....	11,235 ²
Mount Richardson.....	3,887	*Mount Lefroy.....	11,230 ²
Mount Albert—		*Mount Alexandra.....	11,214 ²
Albert Nord.....	3,554	*Mount Sir Douglas.....	11,174 ²
Albert Sud.....	3,775	Mount Woolley.....	11,170
Mount Logan.....	3,700	*Lunette Peak.....	11,150 ²
Mégantic Mountain.....	3,550	Mount Hector.....	11,148
Mattawa Mountain.....	3,500	Diadem Peak.....	11,060
Bayfield Mountain.....	3,470	Mount Edith Cavell.....	11,026
Roundtop (Sutton Mountains).....	3,175	Mount Fryatt.....	10,926
Hereford Mountain.....	2,775	Mount Chown.....	10,920
Barn Mountain.....	2,750	Mount Wilson.....	10,700
Orford Mountain.....	2,750	Clearwater Mountain.....	10,420
Pinnacle Mountain.....	2,200	Mount Coleman.....	10,286
Shield—		Eiffel Peak.....	10,101
Mount Tremblant.....	2,900	Pinnacle Mountain.....	10,062
Mount Sainte-Anne.....	2,625	Mount Rundle.....	9,838
Mount Sir Wilfrid.....	2,569	The Three Sisters.....	9,744
Monteregian Hills—		Mount Eisenhower.....	9,030
Brome Mountain.....	1,750	Mount Edith.....	8,380
Shefford Mountain.....	1,700	British Columbia	
Mount Saint-Hilaire.....	1,350	Vancouver Island Ranges—	
Yamaska Mountain.....	1,350	Mount Albert Edward.....	6,868
Rougemont.....	1,100	Mount Arrowsmith.....	5,962
Mount Royal.....	763	Coast Mountains—	
Mount Saint-Grégoire.....	750	Mount Waddington.....	13,260
Mount Saint-Bruno.....	600		

For footnotes, see end of table.

7.—Principal Heights in each Province and Territory—concluded

Province or Territory and Height	Elevation	Territory and Height	Elevation
	ft.		ft.
British Columbia—concluded		Yukon Territory—concluded	
St. Elias Mountains—		Coast Mountains—concluded	
*Mount Fairweather.....	15,300 ¹	*Mount Hubbard.....	15,013 ⁴
*Mount Root.....	12,860 ²	Mount Walsh.....	14,780
Columbia Mountains—		*Mount Alverstone.....	14,500 ⁴
Monashee Mountains—		McArthur Peak.....	14,253
Mount Begbie.....	8,956	Mount Augusta.....	14,100
Storm Hill.....	5,300	Mount Kennedy.....	13,905
Selkirk Mountains—		Mount Strickland.....	13,813
Mount Dawson.....	11,023	Mount Newton.....	13,811
Adamant Mountain.....	10,980	Mount Cook.....	13,760
Grand Mountain.....	10,842	Mount Craig.....	13,250
Iconoclast Mountain.....	10,646	Badham Mountain.....	12,625
Mount Rogers.....	10,546	Mount Malaspina.....	12,150
Rocky Mountains—		Mount Seattle.....	10,082
Mount Robson.....	12,972		
Mount Clemenceau.....	12,001	Northwest Territories	
Mount Goodsir.....	11,686		
Mount Bryce.....	11,507	Arctic Islands—	
Resplendent Mountain.....	11,240	Baffin—	
Mount King George.....	11,228	Penny Highland (Ice Cap).....	8,200-8,500
Consolation Mountain.....	11,200	Mount Thule.....	5,800 ⁵
The Helmet.....	11,160	Cockscomb Mountain.....	5,300 ⁵
Whitehorn Mountain.....	11,130	Barnes Ice Cap.....	3,700 ⁵
Mount Huber.....	11,051	Knife Edge Mountain.....	2,493 ⁵
Mount Freshfield.....	10,945	Ellesmere—	
Mount Mummery.....	10,918	United States Range.....	9,600 ⁵
Mount Vaux.....	10,891	Commonwealth Mountain.....	7,500 ⁵
*Mount Ball.....	10,865 ²	Mount Townsend.....	7,200 ⁵
Mount Geikie.....	10,843	Mount Jeffers.....	6,500 ⁵
Bush Mountain.....	10,770	Mount Wood.....	5,900 ⁵
Mount Sir Alexander.....	10,740	Mount Cheops.....	5,200 ⁵
Churchill Peak.....	10,500	Devon—	
Mount Stephen.....	10,495	Ice Cap.....	6,190
Cathedral Mountain.....	10,464	Mackenzie King—	
Mount Gordon.....	10,346	Leffingwell Crags.....	1,500
The President.....	10,297	Banks—	
Odaray Mountain.....	10,175	Durham Heights.....	2,213
Mount Laussedat.....	10,035	Victoria—	
Mount Burgess.....	8,473	Shaler Mountains.....	2,000
		Mount Bumpus.....	1,700
Yukon Territory		Mainland—	
St. Elias Mountains—		Mount Sir James MacBrien.....	9,062
Mount Logan.....	19,850	Franklin Mountains—	
*Mount St. Elias.....	18,008 ⁴	Cap Mountain.....	5,175
Lucania Mountain.....	17,147	Mount Clark.....	4,798
King Peak.....	17,130	Pointed Mountain.....	4,610
Mount Steele.....	16,644	Nahanni Butte.....	4,579
Mount Wood.....	15,885	Richardson Mountains—	
*Mount Vancouver.....	15,700 ⁴	Mount Goodenough.....	3,219

¹ The summit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta.
 British Columbia boundary. ³ Part of the British Columbia-Alaska boundary.
 Alaska boundary. ⁵ Approximate.

² Part of the Alberta-
⁴ Part of the Yukon-

Section 2.—Federal Government Surveying and Mapping*

The needs for maps and surveys of Canada are met mainly by the Department of Energy, Mines and Resources. Although not all Branches of this Department make surveys and compile maps, many of them are involved in such work either wholly or partly. They compile topographical, geological and aeromagnetic maps, aeronautical and hydrographic charts, as well as specialized maps showing electoral district boundaries, land use and other features. In carrying out these tasks, the Department is guided partly by long-range plans based on general national needs and partly by requests from other government

* Prepared by H. G. Classen, Public Relations and Information Services, Department of Energy, Mines and Resources, Ottawa.

agencies and private enterprise. Some types of maps and surveys are also produced by provincial and private agencies and, to avoid duplication, the Department co-ordinates its work with these bodies. Other types—such as hydrographic charts—are produced exclusively by the Department.

The staff of the Department numbers about 4,000, of whom 1,000 are scientists and engineers and 1,300 are technicians. Each year, some 1,500 men are sent into the field to make surveys and to carry out research. Of the various Branches, the following are particularly concerned with surveying and mapping: Surveys and Mapping Branch (geodetic and topographic surveys, legal surveys of Canada lands, electoral maps and aeronautical charts); Marine Sciences Branch (hydrographic charts of sea coast and inland navigable waters); Inland Waters Branch (a wide variety of surveys on inland waters); Geological Survey of Canada (geological features); and Observatories Branch (geophysical maps).

Types of Surveys.—In the field of geodesy, the Geodetic Survey maintains a network of horizontal and vertical control points across Canada. Much of its present activity is centred on achieving greater density of control and closing gaps in southern Canada. The ultimate goal is the establishment of at least one horizontal and vertical control point within 10 miles of any point in established and economically important areas. During the summer of 1968, 18 geodetic parties were in the field extending or strengthening the horizontal and vertical network.

The Topographical Survey is proceeding with the establishment of control points at smaller intervals and the mapping of the country at the most popular scales—1:25,000 and 1:50,000. The 1:250,000-scale series, consisting of about 925 maps, was virtually completed in 1967 and revision and updating of these maps are continuing as new information becomes available. Of the 1:50,000 series, about 7,700 different maps are available, representing over one third of Canada's land area. Another 500 maps at the 1:25,000-scale, or $2\frac{1}{2}$ inches to one mile, cover the major cities and other areas of economic importance. The Topographical Survey had 37 officers in the field in 1968, and collaborated with the Geodetic Survey in the extension of first-order control in the Great Slave Lake area and in several municipal control surveys aimed at providing Canadian cities with a firm, permanent basis for planning public works, redevelopment, expansion and other projects.

The Legal Surveys Division is responsible for the technical management of legal surveys of land under federal jurisdiction, such as the northern Territories, National Parks and Indian Reserves. It also executes such surveys on behalf of administering departments, collaborates in the demarcation of provincial boundaries, prepares descriptions of electoral districts and generally provides land surveying services to other departments. Seventeen field parties were active in 1968 as well as one interprovincial boundary commission. These field parties undertook projects in Newfoundland and Prince Edward Island.

The Surveys and Mapping Branch is the major agency in Canada for the preparation of aeronautical charts showing airports, airways and radio and other aids necessary for air navigation.

As a service to map-makers and others interested in that field, the Department maintains the National Air Photo Library, containing a collection of all air photographs taken by or for the Federal Government. During 1967, the Library received 61,000 new photos, bringing the total collection to well over 3,000,000. The seventh edition of the *Air Photo Coverage Map of Canada* is available to assist users with their orders.

Hydrographic and oceanic surveys in Canada's navigable waters and the adjacent oceans are conducted by the Department's Marine Sciences Branch. Operations are directed from Ottawa and carried out through three regional offices—the Atlantic Oceanographic Laboratory in the Bedford Institute, the Pacific Coast Regional Office at Victoria and the Central Regional Office at Ottawa. For its survey and research work, the Branch operates a fleet of ships and launches, including some chartered vessels. This fleet is being modernized and increased. Three new ships were launched in 1967 and one in 1968.

Six of the major ships operate out of the Bedford Institute, five out of Victoria and two in the Great Lakes. Two chartered vessels are based in the Atlantic Region and two in the Great Lakes. Land-based parties, equipped with launches, operate on coastal and inland waters. Branch activities are planned to meet the needs of commerce, industry, fisheries, maritime defence, and weather and ice forecasting, and to provide general coastal charts for fishermen and recreational boating in the inland waters. In 1968, 987 navigational charts were on issue, of which 28 were first editions that year, and 268,000 navigational charts were distributed.

The Inland Waters Branch is responsible for a wide variety of surveys on Canada's inland waters with emphasis on the important fields of water pollution, conservation and



The Bedford Institute of Oceanography at Dartmouth, N.S., with its "floating laboratories", has become an internationally recognized centre for oceanographic research. Its program embraces physical and chemical oceanography, marine geology, air-sea interactions, tides and currents, hydrographic charting and instrument research and development. The Institute is an agency of the federal Department of Energy, Mines and Resources but houses other research units as well, including the Marine Ecology Laboratory of the Fisheries Research Board.

The CSS Hudson, a fully equipped research vessel based at Dartmouth, will set out in late 1969 on a year-long expedition that will completely encircle North and South America. Aboard will be scientists in many disciplines from government departments, universities and institutes and investigations will range from oceanographic circulation to marine biology. Study of the geological and geophysical features of Canada's continental shelves is the prime object of the northern part of the voyage.



utilization. It carries out, for instance, continuous surveys and surveillance of the physical environments of lakes; surveys of water levels, stream flow, sediment transport and shore erosion; groundwater surveys, and surveys of existing and projected uses of water in Canada.

Geological surveys provide an inventory of the potential mineral resources of Canada, aid in the discovery of mineral deposits, and assist in other aspects of the national economy influenced by geological factors. Each year approximately 100 parties are placed in the field. The first systematic reconnaissance of the geology of Canada is approaching completion, and attention is increasingly given to more fundamental research. Approximately 350,000 copies of maps and reports on geological surveys and research are distributed each year.

Both the Geological Survey and the Observatories Branch carry out geophysical surveys, resulting in maps showing such features as variations in terrestrial magnetism, gravity and seismology. The geophysicists of the Geological Survey are interested mainly in outlining geological features and those of the Observatories aim at a better over-all knowledge of the earth. Observatory seismologists have devised new procedures for estimating earthquake risk for engineering purposes and are compiling, by computer, a new earthquake zoning map for Canada for National Building Code purposes. This information is gathered primarily by a network of 28 first-order seismograph stations, and supplemented by temporary, local studies. The Observatories Branch compiles and publishes magnetic charts. Late in 1968, it began an airborne magnetic survey over the Province of British Columbia and a 200-mile-wide strip along the Pacific Coast, using the three-component magnetometer, which it designed and developed a few years ago. In 1967 Observatory geophysicists completed the compilation of a new gravity map of Canada, published in four sections at a scale of 40 miles to the inch.

In the drafting and printing of the maps, highly advanced techniques for the automatic transfer of terrain features from air photos to drafting sheets and precise lithographing are combined to assure speedy processing of field data and the production of colourful, easily understood and relatively inexpensive maps for every type of user, from vacationer to town planner and from prospector to pilot. The Department operates a large modern plant to print the maps and charts compiled by its several Branches as well as maps and charts compiled by other government departments and agencies. The Surveys and Mapping Branch has a stock of over 17,000,000 maps from which it distributes more than 3,000,000 annually.


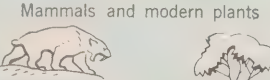







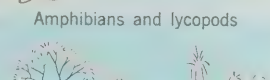










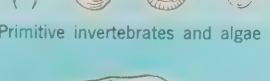


Section 3.—Geology*

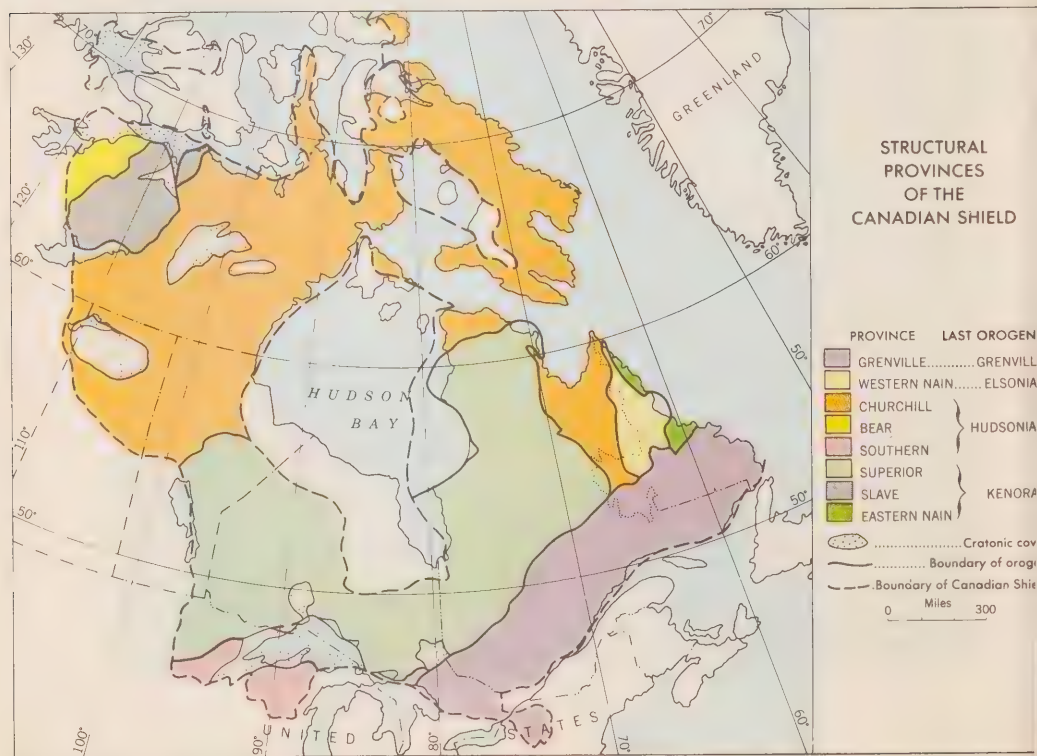
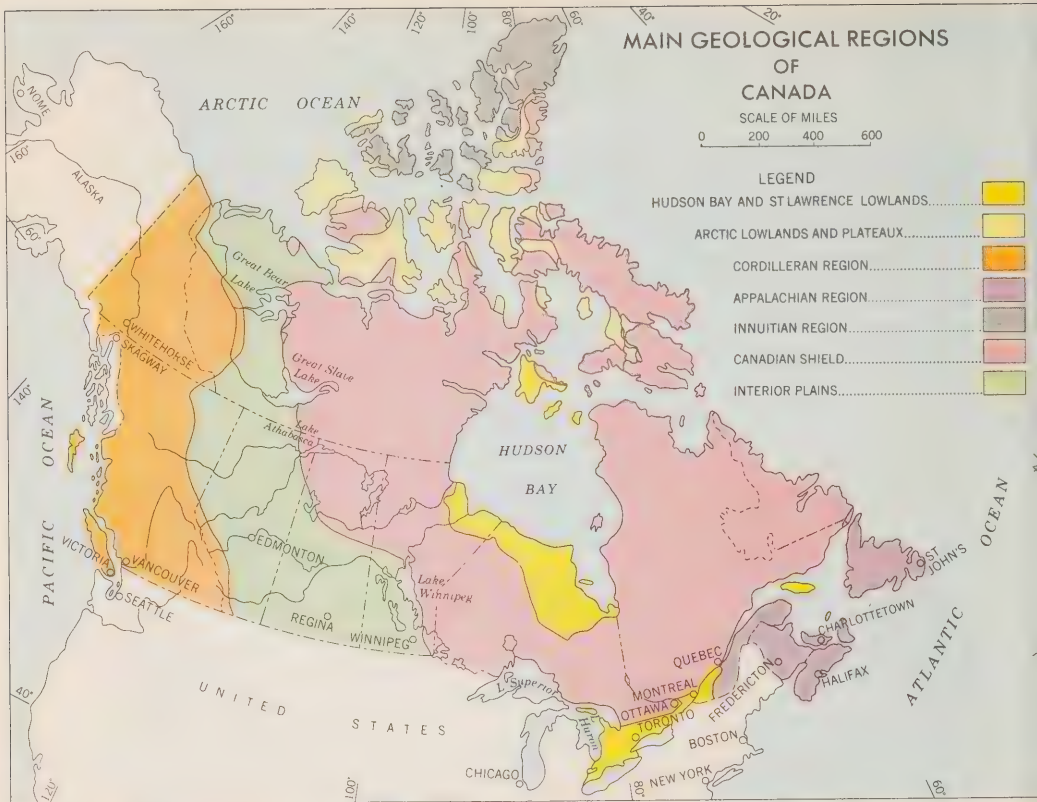
The bedrock foundation of Canada and its adjacent continental shelves seem rigid and unchanging to human eyes, yet, in terms of geological time, these rocks represent only a momentary stage in the evolution of the Continent, an evolution which began more than 4,000,000,000 years ago. Geological study of most of the present land surface of Canada has shown that at various periods and in various regions dark molten rocks rose from great depths, volcanoes erupted on the ancient land and sea floors, thick sequences of sediments accumulated, granites were either intruded as molten magma or derived from earlier rocks during intense folding and mountain building, erosion wore down or subdued the older mountain chains, shallow seas repeatedly encroached on and receded from the Continent of today, continental glaciers covered most of Canada and, as part of these geological processes, valuable minerals and fossil fuels became concentrated under exceptionally favourable conditions. These interrelated geological processes have produced the buried crust and the present face of Canada. They control the distribution of its economic mineral deposits, its physiography and, in large part, its present and potential land use.

The primary geological subdivisions of Canada are outlined in the following sections. The Canadian Shield forms the ancient nucleus of the Continent. As well as comprising the vast areas exposed in Central and Northern Canada, the Shield extends beneath the

* An outline extracted from a more detailed article on "Geology and Economic Minerals of Canada", prepared by W. D. McCartney of the Geological Survey of Canada, appearing in the 1967 Year Book, pp. 19-32.

GEOLOGICAL TIME CHART

ERA	PERIOD	CHARACTERISTIC LIFE	CANADIAN OROGENIES	TOTAL ESTIMATED TIME IN YEARS
CENOZOIC	RECENT PLEISTOCENE	Man 		
	TERTIARY	Mammals and modern plants 		1,200,000
		PLIOCENE 		
		MIOCENE 		
		OLIGOCENE 		
MESOZOIC	CRETACEOUS	Reptiles and gymnosperms 	Laramide 	65,000,000
	JURASSIC		Columbian 	
	TRIASSIC		Nassian Inklinian 	
PALÆOZOIC	CARBONIFEROUS	Amphibians and lycopods 	Tahltanian Appalachian 	225,000,000
		PERMIAN		
		PENNSYLVANIAN		
		MISSISSIPPIAN		
	DEVONIAN	Fishes 	Caribooan Ellesmerian 	345,000,000
	SILURIAN		Acadian 	
	ORDOVICIAN	Higher invertebrates 	Taconic 	440,000,000
	CAMBRIAN			
PRECAMBRIAN	PROTEROZOIC	Primitive invertebrates and algae 		570,000,000
		HADRYNIAN		945,000,000
		HELIKIAN	Grenville 	1,370,000,000
	APHEBIAN	Stromatolites 	Elsonian 	1,735,000,000
ARCHÆAN		Algae and other? 	Hudsonian 	2,490,000,000
		?	Kenoran 	3,200,000,000 or more



veneer of younger marine sediments exposed at the present surface in the Hudson Bay region, some Arctic islands, the St. Lawrence Lowlands and the Interior Plains. West of the Interior Plains, and north and southeast of the Canadian Shield, deep, elongate troughs (geosynclines) developed. These geosynclines received sediments and volcanics which, by folding, were converted into the mountain belts of the Cordilleran, Inuitian and Appalachian regions.

The Canadian Shield.—Precambrian evolution of the present Canadian Shield extended over more than five sixths of known geological time. During this immense interval, many cycles of volcanism, sedimentation, intrusion, metamorphism, mountain building, erosion and ore formation have been completed. The complexities of this history have become better understood as the rate of geological reconnaissance mapping, with the support of helicopters since 1952, has increased and as absolute ages of minerals have been determined by isotopic ratios from about 1,500 well-distributed samples of the Canadian Shield. Many of the absolute ages represent the ages of four main periods of mountain building termed orogenies; these are indicated on the geological time chart facing p. 16. The lower map facing this page shows the eight structural provinces recognized in the Shield. Each structural province is defined by the equivalent isotopic ages of their terminal orogenies as well as being characterized by variations in rock types, degree of metamorphism, and dominant types of ore deposits. Following one or more major orogenies in a region, that portion involved was stabilized, and relatively undeformed younger Precambrian erosion products were deposited to form basins of cratonic cover rocks, most of which are shown on the map of the Shield. These relatively undeformed late Precambrian basins and remnants of early Palaeozoic sediments show that the Canadian Shield has been remarkably stable since late Precambrian time, subject only to encroachment of younger seas and varying degrees of uplift. In relatively recent geological times, Pleistocene glaciation with scouring of bedrock and deposition of clastic materials has profoundly affected the present drainage and physiography of the region.

A large part of the Shield, extending from Georgian Bay to the Strait of Belle Isle, has long been recognized as forming a distinct segment called the "Grenville". It was named after the Grenville series, characterized by crystalline limestone, impure limy strata, and large areas of sedimentary gneisses in various stages of alteration to granite. The eastern part of the province contains large igneous intrusions of anorthosite. The age relations between Grenville strata and those of the neighbouring Superior province are puzzling. Near Sudbury, as well as at the south end of the Labrador Trough, beds can be traced across the boundary into more metamorphosed rocks of Grenville type. It is believed, therefore, that the distinctive features of the Grenville may be related more to the time and degree of metamorphism than to distinctions in the original age of deposition of strata.

The areas of undeformed Precambrian cratonic cover rocks shown on the facing map represent dominantly clastic detritus washed into basins from the consolidated, nearby, older rocks. At times, marine incursions into these basins led to deposition of limestone and dolomite, and volcanics were deposited in others.

The Appalachian Region.—This region comprises the Maritime Provinces and southeastern Quebec and is the northern continuation of a long belt of folded strata extending along the eastern side of the United States. It is on the site of a long, linear trough or geosyncline that existed mainly in Palaeozoic time in which great thicknesses of sedimentary and volcanic strata were laid down. The northwestern boundary of the region lies adjacent to the Canadian Shield and to the St. Lawrence Lowlands. The strata in the Appalachians have been folded and faulted along axes that strike northeasterly except for local regions such as the Gaspé Peninsula where strikes swing to the east. Thus, strata of different kinds and ages and some belts of intrusive rocks normally form northeasterly-trending bands, many of which are responsible for development and orientation of peninsulas, bays and ridges of the region. Two principal periods of orogeny called the Taconic

and the Acadian have been recognized. The Taconic occurred near the close of Ordovician time and the Acadian about Middle Devonian time. In Canada the Taconic disturbances were fairly widespread, the Acadian were more so, affecting areas that were previously affected by the Taconic as well as areas that were not, and the Appalachian orogeny, which was a major feature in parts of the United States, was of minor and local importance.

Metamorphosed Precambrian rocks of Grenville type are exposed to form the Long Range of western Newfoundland and small areas in Cape Breton and New Brunswick. On the east flank of the Appalachian geosyncline, as exposed in southeast Newfoundland, younger Precambrian volcanics and sediments are relatively unaltered and were intruded by small granite bodies 580,000,000 years ago. Although Precambrian rocks probably underlie much of the central Appalachians, they are buried beneath the thick Palaeozoic sequence.

Cambrian slates, minor limestones and local areas of volcanics lie above and adjacent to Precambrian rocks. Massive sulphide deposits in schists derived from Cambrian volcanics in southern Cape Breton and southeast Quebec were formerly mined. The overlying Ordovician beds were formed at the early stage of development of the Appalachian geosyncline. From west to east, and depending on their position in the geosyncline, the thick Ordovician sections comprise limestone and/or slate in western Newfoundland and adjacent to the St. Lawrence Lowlands in southeast Quebec. Silurian strata are rather similar to Ordovician rocks but are not known to contain large mineral deposits. Unlike the Ordovician submarine volcanics, some or most of the Silurian volcanics were formed on land. This may be one factor in the marked difference in known ore content of the two volcanic assemblages.

In Devonian time, granite batholiths were emplaced in the Maritime Provinces, and smaller stocks of the same age were intruded in Gaspé and southeastern Quebec. At this time, older beds were folded and metamorphosed to varying degrees, particularly near the margins of the granites.

Following the folding and granite intrusion that formed the Appalachian Mountains, adjacent basins were rapidly filled with coarse and progressively finer-grained detritus eroded from the adjacent mountains. Some areas included marine beds, such as the petroliferous Albert shales of eastern New Brunswick which yield oil and gas. After initial infilling of basins, shallow Mississippian seas encroached on the valleys and deposited limestones. Many thousands of feet of clastic sediments were deposited after the Mississippian seas retreated. These beds of Pennsylvanian age contain the commercial coal measures of Nova Scotia. In Triassic time, outpourings of basalt, particularly preserved adjacent to and below the Bay of Fundy, terminated rock-forming processes in the Appalachians. Subsequent erosion has yielded the present, fairly subdued topography of this former mountain chain.

The Cordilleran Region.—The Cordillera of Western Canada consists of three parallel northwest-trending geological and topographical systems. The Eastern System of western Alberta, eastern British Columbia, eastern Yukon, and western Northwest Territories includes the Rocky, Richardson, Franklin and Mackenzie Mountains and foothills, and several intervening plateaux. Comprising the Western System are the Coast Mountains along the west mainland of British Columbia, the St. Elias Mountains in southwest Yukon, the Queen Charlotte Islands and Vancouver Island. The Interior System lies between the Eastern and Western Systems. It contains the plateaux, plains and subdued mountain ranges of the interior of British Columbia and Yukon Territory.

Unmetamorphosed Precambrian to Cretaceous sedimentary strata form most of the Eastern System. These sedimentary strata, which have been uplifted several thousand feet by fault movements, are well exposed in the Rocky Mountains. The Interior System is composed largely of metamorphic, sedimentary and volcanic rocks of Precambrian to Mesozoic ages, which are intruded by numerous, generally unconnected, granitic stocks and batholiths. In places, these rocks are overlain by great thicknesses of Cretaceous and

Tertiary volcanic and sedimentary strata. Flat-lying Tertiary basalt flows form many of the plateaux. In the Western System, the rugged Coast Range consists of almost continuous exposures of steeply eroded granitic rocks of Mesozoic and Tertiary ages flanked on both sides by late Palaeozoic and Mesozoic volcanic rocks and by basins of Cretaceous and Tertiary sedimentary rocks.

During late Precambrian times, beds of quartzite, argillite, dolomite and other sedimentary rocks now comprising the Purcell and Windermere beds were deposited in the eastern Cordilleran geosyncline, a vast shallow sea that extended from south of the present Canada-United States border to the Arctic Ocean. From Cambrian until mid-Devonian time, sedimentary strata consisting of shale, quartzite and limestone continued to be deposited in the area which now forms the Eastern and Interior Systems. In southeastern British Columbia, the world-famous Sullivan zinc-lead orebody lies in Purcell beds and is thought to have formed during late Precambrian time.

Beginning in the mid-Devonian and lasting until early Jurassic, the Western System and most of the Interior System consisted of a deep oceanic trough in which accumulated submarine basalts and fine argillaceous and cherty sediments such as those of the Permian-Carboniferous Cache Creek Series and the Triassic Takla Series. Meanwhile, sedimentary strata were forming in the more shallow waters of the Eastern System, east of the present Rocky Mountain Trench. Thus, in the Rocky Mountains, Palaeozoic limestones, dolomite, quartzite and shale are overlain in many places by similar Mesozoic rocks.

The first large granitic bodies were intruded into rocks of the Interior and Western Systems during early Jurassic time. They were composed mainly of granodiorite and quartz diorite, but ranged in composition from gabbro to granite. These intrusions were accompanied by folding, faulting and metamorphism. Although this orogeny may have been most intense during late Jurassic to early Cretaceous time, intrusion continued until early Tertiary time. Many mines in the Cordillera are related to Mesozoic and Tertiary intrusions. Uplift of the rocks during these processes created mountain chains and, by early Cretaceous time, rhyolites, andesites, basalts and sediments were being deposited in inter-mountain basins largely separated by the uplifted areas. Erosion of the mountains followed and, in late Cretaceous time, sandstones, conglomerate, shale and extensive beds of coal accumulated in large isolated basins such as that now occupied by the Nanaimo Series on Vancouver Island. Gradual uplift continued so that by Tertiary time the basins were very local and entirely continental. Sandstones and other sediments derived from elevated areas continued to be deposited in the low-lying valleys.

Uplift and mountain building in the Eastern System was delayed until the Laramide Orogeny in early Tertiary time. Unlike the earlier orogenies to the west, no significant granitic bodies were intruded in the Eastern System. In many parts of the Rocky Mountains, Precambrian and Palaeozoic strata were thrust several miles to the east along low-angle westward-dipping fault planes. Thus, these transported older rocks commonly came to rest above younger beds. At the same time and again in late Tertiary time, the eroded Western and Interior System rocks, as well as those of the Eastern System, were again uplifted. Erosion, including glacial scouring, which in places has continued to the present day, formed deep valleys in the elevated rocks and has produced the present configuration of the Coast Range, the Rockies and the intervening mountain chains.

In the Interior System, much lava was deposited on the plateaux at various times during the Tertiary Period, mainly in or about Miocene time. The lavas are chiefly basaltic and apparently welled from long fractures rather than from individual volcanoes. Sandstone, shale and volcanic ash were deposited in local freshwater basins in the same belt.

In latest Tertiary and Pleistocene times, some uplift and minor volcanic deposition occurred in the Western and Interior Systems. Very recent, post-glacial volcanic activity is represented by several well-preserved cinder cones in north, southwest and central British Columbia.

Glaciation, as in other parts of Canada, was widespread in the Cordillera during the Pleistocene Epoch, and glaciers persist today in many mountain systems, chiefly in the

St. Elias and Coast Mountains and the Columbia Ice Field in the Rockies. A large part of the Yukon Territory, however, escaped Pleistocene glaciation because the high St. Elias Mountains barred moisture-laden winds from the Pacific to such an extent that ice did not accumulate in parts of the interior, despite the depressed temperatures of the time. This lack of glaciation was largely responsible for the preservation of the Klondike placer gold deposits.

Innuitian Region.—North of the Arctic Plains and Plateaux, where Palæozoic limestones rest on Precambrian generally-stable crystalline rocks, deep crustal depressions were initiated in late Proterozoic time and received thick deposits of carbonates and shales (miogeosynclinal type) and, in northern Ellesmere Island, volcanics and greywackes (eugeosynclinal type). In the southern basins, Proterozoic sediments are mainly carbonates and coarse to fine clastic sediments. Overlying these conformably are thick layers of lower Palæozoic carbonates which are thicker and include more abundant dark shales to the north. Middle Ordovician gypsum beds extend in places across the southern basins. Carbonates are admixed with muds and sands in parts of the Upper Silurian to Middle Devonian beds, and the influx of these clastic materials probably reflects relatively minor orogenies and periodic uplifts such as the Boothia Arch in the region. Folding of the eugeosynclinal volcanics of northern Ellesmere Island produced land areas from which sands were swept southward to form Upper Devonian non-marine sandstones in the miogeosynclinal basins. The total assemblage of sediments is more than 35,000 feet thick in some districts. The dominant folding of the Franklinian geosyncline, called the Ellesmerian orogeny, occurred near the close of Upper Devonian time. With the exception of the Cornwallis fold belt discussed below, the resulting folds of the Innuitian Region trend southwesterly from northern Ellesmere Island and swing westerly through the Parry Islands. The Cornwallis fold belt interrupts this trend at right angles because it lies along a buried north-trending prong of Precambrian rocks, which extend from exposures of the Boothia Peninsula. This elongate Precambrian basement rose periodically at least six times to produce north-trending faults and folds in the overlying Palæozoic beds of the Cornwallis fold belt, whereas the Franklinian geosyncline was deformed by somewhat younger and more widespread compressional crustal forces.

Following the Ellesmerian orogeny, a vast area including the present Sverdrup Islands and much of western Ellesmere Island was depressed to form the site of deposition of a composite thickness of 60,000 feet of Pennsylvanian to Tertiary volcanics, shales, sandstones, some gypsum and, in the upper part, a thick assemblage of non-marine clastic sediments. The rocks of this Sverdrup Basin were deformed about the end of the Mesozoic Era by the Laramide orogeny. Late Palæozoic gypsum beds, which tend to flow under high pressure, were forced upward to intrude overlying Mesozoic beds. Gypsum diapiric domes later penetrated Tertiary beds.

Arctic Lowlands and Plateaux.—These geological and physiographic divisions lie in large basins separated by arches and belts of exposed Precambrian crystalline rocks. Gently inclined or flat sediments underlying the basins tend to be thin sandstones and limestones near the basal contact with metamorphosed Precambrian rocks but limestones and dolomites of Middle Ordovician to Early Devonian age are the principal rock types and at some localities are estimated to be up to 18,000 feet thick. Shales, sandstones and restricted areas of conglomerates of Middle Devonian to Late Devonian age are normally the youngest rocks preserved.

Arctic Coastal Plain.—This plain comprises late Tertiary or Pleistocene sand and gravels, which dip gently seaward along the northern exposed border of the Innuitian Region. The very young beds cover the extensions of eroded fold belts and the Sverdrup Basin. Although of minor land extent, they or their equivalents probably extend far out on the Arctic continental shelf.

The Interior Plains.—The Interior Plains are underlain by undisturbed or gently flexed or tilted sedimentary strata, which overlap the western border of the Canadian Shield and merge with the eastern foothills of the Cordilleran region. The Shield slopes at a rate of 15 feet per mile under the Great Plains, in the western part of which the overlying strata reach a thickness of 10,000 feet. The older overlying beds have been bevelled by erosion along the border of the Shield, exposing in central Manitoba marine beds of limestone, sandstone and shale of Ordovician, Silurian and Devonian ages. Farther north the exposed Palaeozoic strata are mainly Devonian. The Palaeozoic formations are overlain by early Mesozoic strata of marine origin and these by both marine and freshwater Cretaceous formations, which are the uppermost strata in much of Saskatchewan and Alberta. In places, however, as at Turtle Mountain in Manitoba and the Cypress Hills in Saskatchewan, these are overlain by remnants of early Tertiary formations.

St. Lawrence and Hudson Bay Lowlands.—The St. Lawrence Lowlands are underlain by marine beds deposited during much of Palaeozoic time. Rather similar late Ordovician to Devonian beds are exposed in the Hudson Bay Lowlands. Small areas of Palaeozoic beds are preserved at various localities on the Canadian Shield between these two Lowlands and suggest that arms or shallow straits of Palaeozoic seas may have connected the present Hudson Bay and the St. Lawrence Lowland areas. The St. Lawrence Lowlands from Quebec City to Windsor are occupied by about one half of the population of Canada, supported by much arable land and major industrial concentrations. These Lowlands are divided by an exposed southeast-trending prong of the Canadian Shield called the Frontenac Axis, which extends into the United States northeast of Lake Ontario. Southwest of the Frontenac Axis, marine sedimentary rocks of Cambrian to Mississippian age rest on buried Precambrian rocks. Known formations there have an aggregate thickness of almost 6,000 feet. Rocks are mainly limestones, shales and sandstones deposited in generally shallow seas.

Surficial Deposits

The continental glaciation of most of Canada has removed weathered bedrock and residual soils and has almost certainly removed some types of ores such as pre-Pleistocene placer gold deposits, laterites, and upper portions of metallic and manganiferous ore deposits, which had formerly been enriched under stable near-surface conditions. Material deposited includes dominantly clastic detritus such as tills, esker gravels, outwash gravels and sands, or rock flour deposited in lakes or shallow seas in the form of multiple layers of varved clay or massive clay beds. Maps showing the surface distribution of these materials, published by federal agencies, reflect some physiographic features and present and potential land use.

Section 4.—Archaeology

This Section of the 1968 Year Book contains a special article on "Archaeology in Canada", prepared by scientists of the National Museum of Man, National Museums of Canada. The article is a review of the study of Canadian prehistory and summarizes the interpretations that have so far been made of findings by scientists working in this discipline throughout the years. The outlines therein of recent archaeological work undertaken in Eastern Canada, Western Canada and Northern Canada are brought up to date in the following paragraphs which cover National Museum of Man staff and contract-supported field work conducted during 1968. Work by other archaeologists had not been reported at the time of writing.

Archaeological Work in Eastern Canada.—J. V. Wright located 39 new sites and re-examined six known sites in central Ontario and western Quebec. A northern Ontario survey of Attawapiskat Lake produced nine sites including one stratified site which appears to possess elements of the entire prehistoric occupation of the region; excavation of this site is planned for 1969. D. Sanger conducted a survey of the Tobique River valley in northern

New Brunswick. Although agricultural and lumbering activities have destroyed many sites in this area, several worthy of future excavation were located, ranging in age from Archaic to late prehistoric and generally associated with a salmon-holding pool and a small tributary creek or spring. Sites were also tested in the headwaters of the Miramichi River, along the Saint John River and at the mouth of that river. A brief reconnaissance of the east coast of New Brunswick suggested good potential for further investigations in that area.

Contract-supported work in Eastern Canada included the following projects: K. C. A. Dawson, Lakehead University, excavated a large prehistoric site on Lake Nipigon, Ont.; Selwyn Dewdney, London, Ont., located and recorded aboriginal rock art in Manitoba and Ontario; William E. Hurley, University of Toronto, conducted an archaeological survey of southwestern Ontario; J. N. Emerson, University of Toronto, administered the salvage test excavation of the Montreal River site on Lake Timiskaming, Ont., preparatory to a major excavation of this large stratified site with an occupation spanning at least 6,000 years. Jacques Bordaz, Université de Montréal, undertook archaeological administration of the Pointe-aux-Buissons site excavation near Beauharnois, Que., which is being carried out by members of the Quebec Prehistoric Archaeology Society; René Ribes, Le Centre des Études Universitaires, undertook field work in the Trois-Rivières region of Quebec; John Erskine, Wolfville, N.S., located and recorded archaeological sites in the Passamaquoddy Bay region of New Brunswick; James Tuck, Memorial University, excavated an Archaic burial site at Port-au-Choix, Nfld.; and William Fitzhugh conducted an archaeological survey of Lake Melville in Labrador.

D. MacLeod continued field programs in the Churchill Falls area of central Labrador and the Twillingate region of northeastern Newfoundland. The Labrador enterprise is primarily a salvage operation in anticipation of flooding by the Churchill Falls Hydro Development and is yielding background for Montagnais-Naskapi culture history. Problems involving widespread relationships between the Maritime Archaic and Eskimo cultures are gleaming grist from the Newfoundland Island program.

A rich "red paint" cemetery of the same type documented by Moorehead in Maine has been excavated at Twillingate and two related occupation sites nearby are under study. Dorset cultural remains also abound in the area. It is anticipated that the entire sequence from Archaic to Beothuk will be traced here and that the data will be, as they have been so far, mutually complementary to current research being carried out by Memorial University, St. John's, particularly as regards the Port-au-Choix complex.

Archaeological Work in Western Canada.—R. Wilmeth excavated three houses at the Potlatch site, Anahim Lake, B.C. The first of these, Potlatch House, was a rectangular structure, its wall consisting of a series of posts set in a trench with logs lying horizontally between the posts and the inside of the trench. The material from Potlatch House was largely historic, consisting of iron nails, gun parts, copper scrap, glass and trade beads, with a few projectile points, knives and scrapers of native manufacture. Tshandu House was a semi-subterranean dwelling with a floor area sloping up about .3 meters to a bench which extended to the periphery of the house. A row of heavy cobbles extending around the house periphery seemed to represent the area where butt ends of rafters rested. The other semi-subterranean dwelling, Spalyan Bat'o House, appeared to be similar in construction but was more difficult to define. Both houses contained a predominance of aboriginal material and only very small numbers of European trade goods. At present, the site appears ascribable to the late eighteenth century-early nineteenth century Chilcotin.

G. F. MacDonald conducted archaeological field research, with a crew of 26 university students and a Museum technician, on five prehistoric sites on the northern coast of British

Columbia. The sites were located on an east-to-west transect between the first canyon of the Skeena River near Terrace to Lucy Island, a small offshore island on Hecate Strait. All five sites have a minimum of 3,000 years of cultural deposit and were chosen to provide an example of the sequence from each of five important ecological areas. At the Kitselas Canyon of the Skeena, a stratified fishing site with 13 feet of cultural deposits produced more than 5,000 stone tools. A cobble tool and spall industry complemented the fine grain industry throughout the sequence, and in the upper portions of the deposit a third industry of pecked, sawn and ground stone was well represented. On the coast, a small shell midden, which served as a temporary camp at the mouth of a salmon stream and close to inland hunting territories, was investigated. The first site of the Prince Rupert harbour excavation produced a sample of approximately 300 specimens in a 1-foot deposit; one dozen human burials were encountered. From the second site in the Dodge Cove area, which had undergone virtually no disturbance since its abandonment in late prehistoric times, more than 40 complete burials and a dozen complete dog skeletons were recovered. Two house benches were encountered, each with its own dump area in which the burials were located. Of considerable interest was a wide band of waterlogged deposit running through the midden and containing preserved wood and fibre artifacts in undetermined quantities.

Contract-supported work in Western Canada included the following projects: A. L. Bryan, University of Alberta, excavated a deeply stratified site in the Cypress Hills Provincial Park of Alberta and conducted archaeological reconnaissance north of Calling Lake and along the Athabasca River; Ruth Gruhn, University of Alberta, continued excavation at sites in Alberta in connection with the long-term project to determine geochronology and the sequential ecology of prehistoric man in different environmental regions of the province; C. E. Borden, University of British Columbia, reported on the Milliken and Mazama phases of the Fraser Canyon sites in British Columbia; Donald H. Mitchell, University of Victoria, conducted test excavations at three sites on the Chilcotin Plateau which were discovered in 1964; and Jerome Cybulski, University of Toronto, recovered burials from the Tsimshian area of British Columbia.

Archaeological Work in Northern Canada.—W. N. Irving returned to the Old Crow area in northern Yukon Territory to search for sites intermediate in age between the Athabaskans of 1,000 years ago and cultures of Pleistocene age reported earlier. Half a dozen such sites were found but none are associated with the ancient beach lines that surround the Old Crow Flats and none can be dated directly. Of considerable interest is a caribou compound made of timber which was operated until the introduction of rifles about 1895. The corral is two parallel fences half a mile long and originally six feet high; the wings are each about two miles long. The size of the operation implies a level of social organization and administrative power far in excess of those usually attributed to northern forest hunters. Additional reconnaissance in the Dawson area turned up several late prehistoric sites similar to those near Old Crow attributed to the Kutchin. Directly related to Irving's work is that of contractors Richard E. Morlan and William B. Workman mentioned below.

R. J. McGhee carried out field work in the vicinity of Coppermine, N.W.T. Sixteen archaeological sites were located in the lower Coppermine River valley, the majority clustered about Bloody Falls which is the first major rapid 10 miles above the mouth of the river. Six sites situated on the edge of a terrace west of the river at an altitude of 85 meters above sea level, the marine limit approximately 6000-8000 years ago, yielded "Plano" points of three distinct types. These finds suggest that people of the Northern Plano Tradition reached the central Arctic Coast prior to the appearance of Eskimo cultures in the area; radiocarbon dates may be obtained from burnt bone samples associated with

Keewatin Lanceolate, Thaltheilei, and round-based Plano points. Arctic Small Tool tradition and Thule culture components were excavated at Bloody Falls but no Dorset occupation was discovered in the area surveyed.

Donald W. Clark excavated several early historic houses and recovered Norton and later materials from Norutak Lake in the Allakaket region of Alaska. In addition, he discovered traces of a new culture related to some of the oldest now known in the area. He remained in Allakaket through fall and early winter gathering data for the direct historical (or ethnographic) approach to Athabaskan prehistory.

Contract-supported work in Northern Canada included the following projects: Richard E. Morlan, University of Wisconsin, excavated Athabaskan archaeological sites in northern Yukon Territory; William B. Workman, University of Wisconsin, excavated multi-component sites near Aishihik Lake in southwest Yukon Territory; W. C. Noble, McMaster University, conducted archaeological survey and excavation in the Great Bear-Camsell River-Great Slave region of the Northwest Territories; C. F. Merbs, University of Chicago, recovered burials of Thule culture Eskimos, began test excavations of Thule culture habitation sites and prepared reports on the mainland coast of Roe's Welcome, N.W.T.; and G. Barré, Université de Montréal, carried out survey and archaeological salvage on the offshore islands on the south side of Hudson Strait, N.W.T.

Radiocarbon Program.—As of mid-October 1968, 29 radiocarbon samples received from staff and contractors had been processed and catalogued. Of the 41 samples submitted to laboratories for dating, results had been received on eight, and descriptions of these were prepared for publication in *Radiocarbon*. A manuscript, "Canadian Archaeological Radiocarbon Dates", was prepared for publication in *National Museum of Canada Contributions to Anthropology* and descriptions of samples dated by the Geological Survey of Canada were edited for publication in *Geological Survey of Canada Radiocarbon Dates VIII*.

PART II.—LAND RESOURCES, PUBLIC LANDS AND WILDLIFE

Section 1.—Land Resources

Information available regarding Canada's land resources is shown in Table 1, where the land area is classified as occupied agricultural, forest and "other" land, the last including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. The Forestry Branch of the Department of Fisheries and Forestry estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1966, less than 8 p.c. is classed as occupied farm land. A great part of the 1,599,542 sq. miles of "other" land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is practically nil and the forest area is estimated at 275,800 sq. miles.

On the basis of information currently available, it is estimated that, in addition to the present arable land across the country, about 40,000,000 acres of virgin land can be used for arable crops if the need arises. However, most of these reserves will require clearing or other improvement measures before they can be used for agriculture. In addition to the present arable land and potentially arable land, 55,000,000 to 60,000,000 acres are suitable for wild pasture.

As the Canada Land Inventory progresses (see Sect. 4 of Chap. X), a great deal of detailed information is becoming available on the land resources of the country, their present utilization and their capability.

1.—Land Area classified as Occupied Agricultural or Forest, by Province

Note.—Figures for occupied agricultural land were obtained from the 1966 Census; areas of forest land were compiled by the Forestry Branch of the Department of Fisheries and Forestry from estimates supplied by the Forestry Service in each province.

Description	New- found- land	Prince Edward Island	Nova Scotia	New Brun- swick	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Y.T. and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Occupied Agricultural Land—												
Improved—Crops and summer fallow	20	627	495	677	8,149	13,419	17,754	67,053	38,073	1,676	2	147,945
Pasture.....	8	258	207	261	3,314	4,587	1,204	2,984	3,611	983	—	17,097
Other.....	4	35	57	60	458	750	1,489	1,008	935	93	1	3,950
Unimproved—Forest (woodland).....	21	437	1,694	1,522	5,902	4,420	1,805	2,106	2,905	1,250	1	22,182
Other.....	24	121	440	311	2,311	4,668	8,476	29,051	31,012	4,497	5	80,916
Totals, Occupied Agricultural Land	77	1,448	2,893	2,831	20,134	27,853	29,818	102,292	76,536	8,269	9	272,070
Forest Land—												
Softwood—Merchantable.....	24,422	78	7,270	6,297	75,687	44,109	14,669	10,573	14,483	80,330	35,200	313,118
Young growth.....	5,835	396	789	2,889	40,922	35,925	20,366	3,413	14,042	87,786	10,000	222,363
Mixed wood—Merchantable.....	5,403	133	5,250	7,298	47,500	34,533	5,459	9,011	12,636	—	19,800	132,023
Young growth.....	269	145	458	2,042	26,281	34,289	6,514	5,046	11,308	—	3,500	89,852
Hardwood—Merchantable.....	9	13	841	1,939	14,391	6,559	3,403	9,205	5,255	3,945	4,700	50,260
Young growth.....	244	11	45	1,952	14,344	17,961	4,767	1,773	13,728	7,953	2,500	64,278
Unclassified.....	2,680	37	427	2,470	1,500	1,191	3,011	3,132	45,120	28,397	—	87,955
Totals, Productive Forest Land	33,862	813	15,080	23,887	220,625	164,567	58,189	42,143	116,572	208,411	75,700	959,849
Non-productive Forest Land¹.....	53,930	122	1,194	442	157,500	97,175	64,631	75,595	41,023	59,227	200,100	750,939
Totals, Forest Land.....	87,792	935	16,274	24,329	378,125	261,742	122,820	117,738	157,595	267,638	275,800	1,710,788
Net Productive Land¹.....	33,918	1,824	16,279	25,196	234,857	187,991	86,112	142,239	190,293	215,430	75,708	1,269,757
Other Lands².....	55,197	238	2,929	2,197	131,503	58,926	61,032	2,348	17,574	84,622	1,182,976	1,599,542
Totals, Land Area³.....	143,045	2,184	20,402	27,635	523,860	344,092	211,775	220,152	248,800	359,279	1,458,784	3,560,238

¹ Includes in *Forest Land*; duplication eliminated in the item *Net Productive Land*.

² Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions, and reserve forest lands for which no inventories are available.

³ Includes only occupied agricultural land (less forest, woodland) plus productive forest land.

⁴ Includes open muskeg, swamp and rock and also unclassified land.

⁵ *Net Productive Land* plus *Non-productive Forest Land* plus *Other Land*.

Section 2.—Federal and Provincial Public Lands

In Table 2, classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from provincial government sources.

2.—Total Area classified by Tenure (circa) 1967

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	6,815	2,052	15,882	15,465	43,500	45,526
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	55	68	145	590	470 ¹	1,129
3. National Parks.....	153	7	517	79	"	12
4. Indian reserves and settlements.....	—	4	40	59	294	2,408
5. Federal forest experiment stations.....	—	—	—	35	7	38
6. Provincial lands other than Provincial Parks and provincial forests.....	148,950	44	4,825	10,714	491,030	350,325
7. Provincial Parks.....	95	3	16	5	53,081	13,144
8. Provincial forests.....	117	6	—	1,407	6,478	"
Totals.....	156,185	2,184	21,425	28,354	594,860	412,582
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	53,380	105,596	99,038	20,356	93	407,703
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	1,077	5,187	2,860	434	1,508,234 ⁴	1,520,249
3. National Parks.....	1,148	1,496	20,717 ⁵	1,671	3,625 ⁶	29,425
4. Indian reserves and settlements.....	846	1,964	2,512	1,316	15	9,458
5. Federal forest experiment stations.....	26 ⁷	—	23	—	12	141
6. Provincial lands other than Provincial Parks and provincial forests.....	188,459	15,706	118,547	252,062	—	1,580,662
7. Provincial Parks.....	2,858 ⁸	1,803	2,321	10,038	—	83,364
8. Provincial forests.....	5,177 ⁸	119,948	9,267	80,378	—	222,778
Totals.....	251,000⁹	251,700	255,285	366,255	1,511,979	3,851,809⁹

¹ Includes Gatineau Park (137.5 sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks. ² Less than one square mile. ³ Included in item 6.

⁴ Includes 952,849 sq. miles set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks. ⁵ Includes that part of Wood Buffalo Park in Alberta (13,675 sq. miles). ⁶ That part of Wood Buffalo Park in N.W.T. ⁷ This forest experiment area of 26 sq. miles is also included in National Parks figure. ⁸ Includes 1,945 sq. miles of provincial park land within provincial forest reserves. ⁹ Does not add because of duplications; see footnotes ⁷ and ⁸.

Federal Public Lands.—Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, ordnance and admiralty lands, National Parks and National Historic Parks and Sites,

forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the Federal Government for various purposes connected with federal administration (see Table 2). These lands are administered under the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 93 sq. miles of a total area of 1,511,979 sq. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Department of Indian Affairs and Northern Development.

Provincial Public Lands.—Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 132 sq. miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVII, under "Lands and Land Settlement".)

Subsection 1.—National Parks

Canada's National Parks are the result of the Federal Government's efforts to preserve natural areas of outstanding scenic and biological interest for the benefit of the public. The national park concept, which began with the establishment of Yellowstone National Park in the United States in 1872, was soon afterwards applied in Canada. In 1885, the Canadian Government reserved from private ownership the hot mineral springs of Sulphur Mountain in what is now Banff National Park. Two years later, this 10-sq. mile reserve was extended to 200 sq. miles and named Rocky Mountain Park, the first federal park in Canada. In the same year, Queen Victoria Niagara Falls Park, the first provincial park, was established by the Ontario Government to protect the public's right to view the great natural wonder of Niagara Falls. Two land reserves in southern British Columbia—Yoho and Glacier—were established by the Federal Government in 1886, a reserve in the Waterton Lakes area of southern Alberta in 1895, and an area of 4,200 sq. miles around Jasper, Alberta, in 1907. These four reserves, all in the western mountain ranges, joined Banff as the nucleus of the National Park system when the Dominion Forest Reserves and Parks Act was passed by Parliament in 1911. The Act also provided for a distinct National Parks Branch in the Federal Government to protect, administer and develop the parks.

By 1935, nine more National Parks had been established. Three of these were in Ontario and consisted of federally owned Crown land; one in Saskatchewan and one in Manitoba were former forest reserves; Wood Buffalo National Park, straddling the Alberta-Northwest Territories border and occupying an area of 17,300 sq. miles, making it the largest national park in the world, was established as a refuge for the largest surviving herd of Buffalo in North America; Elk Island National Park near Edmonton was also established as a preserve for buffalo; and Mount Revelstoke and Kootenay National Parks, scenic areas in southern British Columbia, were established by agreement between the Federal and British Columbia Governments.

The parks added to the system since 1935 were set up with the co-operation of provincial governments which made lands available for National Park purposes. All lands suitable for National Parks are now under the administration of provincial and territorial

governments and a new National Park may be established by Act of Parliament only after the land for it has been acquired by the provincial government and transferred, together with all its resource rights, to the administration of the Federal Government.

National Parks are now under the jurisdiction of the Minister of Indian Affairs and Northern Development and the National and Historic Parks Branch and are administered under the National Parks Act enacted in 1930 (RSC 1952, c. 189) and various park regulations. The purpose of the parks and the objectives of their management are set out in that Act, which dedicates the parks to the people of Canada for their "benefit, education and enjoyment" and instructs that they are to be maintained and used so as to leave them unimpaired for the enjoyment of future generations.

An important step in the evolution of National Park administration was taken when all policies regarding the parks were reviewed and consolidated in a statement that was approved by the Government and announced in the House of Commons on Sept. 18, 1964. The main points of this policy statement, which will guide administration and provide objectives for planning and development, are:—

- (1) National Parks are established to preserve for all time the most outstanding and unique natural features of Canada for the benefit, education and enjoyment of Canadians as part of their natural heritage. They are dedicated forever to one use—to serve as sanctuaries of nature for rest, relaxation and enjoyment. No exploitation of resources for any other purpose is permitted. All development must contribute to public enjoyment and conservation of the parks in a natural condition.
- (2) Zoning will be used to guide development and to preserve park values. Visitor services will be grouped generally to visitor service centres, a definition that applies to existing townsites.
- (3) National Parks cannot meet every recreational need; the most appropriate uses are those involving enjoyment of nature and activities and experiences related to the natural scene.
- (4) The Federal Government assumes the cost of administration and protection in the parks and provides basic facilities for public use, such as roads, trails, campgrounds, picnic areas, nature interpretation and utilities. Other facilities beyond basic requirements, such as hotels, motels, restaurants, gas stations, stores and other special services, are provided by private enterprise.
- (5) Park residents and businesses should be in the same economic position as those operating outside the National Parks and this principle governs the approach to charges, rentals and fees. The users of special services such as swimming pools, marinas, golf courses and fully serviced campgrounds should pay the operation and maintenance costs of these publicly operated facilities. In general, permanent and seasonal residents should be limited to persons providing basic services to park visitors and to the park community.
- (6) All decisions affecting public development and the activities of private enterprise must be governed by the national interest as expressed by the National Parks Act.

In addition to the National Parks, which preserve natural features, National Historic Parks and Sites commemorate events of national importance and preserve historic landmarks or objects of historic, prehistoric or scientific interest, also of national importance. Hundreds of monuments or plaques commemorating personages or events have been erected across the country. A site is declared of national historical significance by the Minister of Indian Affairs and Northern Development on the recommendation of the Historic Sites and Monuments Board of Canada, an advisory board of historians representing all provinces. In late 1967, a National Historic Sites policy statement was approved by the Board, accepted by the Minister and tabled in the House of Commons for the information of Parliament. One of the main points of the policy statement recognized the need for a comprehensive long-range historic sites program, establishing proper thematic and regional priorities.

The National Parks and National Historic Parks and Sites are administered by a director, three assistant directors and three regional directors who are responsible for operations in the Western Region, the Central Region (Ontario and Quebec) and the Atlantic Region. Each regional director is advised by representatives of the staff components of the Branch—Financial and Management, Personnel, National Parks Service, National Historic Sites Service, and Engineering and Architectural. A resident superintendent

manages each park and directs a staff of park wardens who protect the park and its natural features and enforce park regulations, park naturalists who explain the park to visitors and offer various educational services, and other administrative, maintenance and visitor service personnel.

Each park is being developed to yield the recreational potential for which it is suited and sightseeing, camping, fishing, photography, hiking and nature study are the most popular recreations common to the 18 parks that are accessible to the public. There are campgrounds in each park; daily charges are \$1, \$1.50 or \$2 a day, depending on the services provided. Motor vehicles may enter parks in the Atlantic Provinces free of charge but an admission fee, varying from 25 cents for a single entry to \$2 for an annual licence good for all parks, is payable on entering all parks in Western Canada and Point Pelee National Park in Ontario; all fees are currently under review and an increase may be expected in 1969.

3.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
National Parks				
Terra Nova.....	On Bonavista Bay, Newfoundland, 205 miles north of St. John's.	1957	153.0	Rocky headlands, wooded interior areas, offshore and freshwater fishing. Serviced campground and cabin accommodation.
Prince Edward Island.	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of the Gulf of St. Lawrence. Fine bathing beaches. Hotel and cabin accommodation. Serviced campgrounds.
Cape Breton Highlands	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coastline with mountainous background. Fine seascapes. Hotel and cabin accommodation. Serviced campgrounds.
Kejimikujik.....	Interior of southwestern Nova Scotia near Maitland Bridge.	¹	150.0	Newest National Park still at early stage of development.
Fundy.....	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Interesting rock formations on coast and rolling hills inland. Motel and cabin accommodation and campgrounds.
Georgian Bay Islands..	In Georgian Bay, 3 miles by water from Honey Harbour, Ont.	1929	5.4	Camping, canoeing, hiking, swimming, fishing and boating opportunities. Unusual geological formations on Flowerpot Island, off Tobermory on Midland Peninsula. Accessible by boat only.
Point Pelee.....	On Lake Erie near Leamington, in southwestern Ontario.	1918	6.0	Most southerly part of Canadian mainland. Fine bathing beaches. Unusual flora. Resting place for migrating birds. Campground.
St. Lawrence Islands...	In St. Lawrence River between Brockville and Kingston, Ont.	1914	260.0 (acres)	Mainland area and 14 islands with docks, campgrounds and picnic areas. Representative selection of the Thousand Islands. Islands accessible by boat only.
Riding Mountain.....	Southwestern Manitoba, west of Lake Winnipeg.	1929	1,148.0	Woodland escarpment with fine lakes. Fishing, swimming, trail-riding, hiking and golfing. Visitor services in Wasagaming townsite. Campgrounds.
Prince Albert.....	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and interlaced with streams. Fishing, swimming, boating and golfing. Marina. Visitor services at Waskesiu townsite.

¹ Not yet formally established.

3.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—continued

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
National Parks— concluded				
Banff.....	Western Alberta, on east slope of Rockies, 65 miles from Calgary.	1885	2,564.0	Best known and most popular of the National Parks. Magnificent scenery. Mineral hot springs. Resort facilities at Banff and Lake Louise. Skiing developments at Mount Norquay, Mount Whitehorn, Sunshine, Skoki and Temple. On Trans-Canada Highway.
Elk Island.....	Central Alberta, near Edmonton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular picnic and day-use area. Cabin accommodation and serviced campground.
Jasper.....	Western Alberta, on east slope of Rockies, 235 miles from Edmonton.	1907	4,200.0	Mountainous area and noted wildlife sanctuary. Majestic peaks, icefields, beautiful lakes and famous resort, Jasper. Mineral hot springs. Connected with Banff by scenic Banff-Jasper Highway. Accessible also by rail. Hotel and cabin accommodation and campgrounds.
Waterton Lakes.....	Southern Alberta, adjoining Glacier Park in Montana, U.S.A.	1895	203.0	Canadian section, Waterton-Glacier International Peace Park. Mountainous area with spectacular parks and beautiful lakes. Hotel, motel and cabin accommodation. Serviced and unserviced campgrounds.
Glacier.....	Southeastern British Columbia, on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Climbing, hiking and camping. On Trans-Canada Highway. Visitor services at Rogers Pass.
Kootenay.....	Southeastern British Columbia, on west slope of Rockies.	1920	543.0	Includes Vermilion-Sinclair section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Mount Revelstoke.....	Southeastern British Columbia, on west slope of Selkirks.	1914	100.0	Mountain-top plateau with rolling alpine meadow and picturesque tarns.
Yoho.....	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Hotel and cabin accommodation. Serviced and unserviced campgrounds.
Wood Buffalo.....	Partly in Alberta, and partly in Northwest Territories, between Athabasca and Slave Rivers.	1922	17,300.0	Largest National Park in world. Home of largest remaining herds of plains and wood bison and nesting ground of whooping crane. Accommodation at and access by boat and aircraft from Fort Smith, N.W.T.
National Historic Parks			acres	
Signal Hill.....	St. John's, Nfld.....	1958	243.4	Site of 1762 battle between French and British and of many fortifications. Marconi made first transatlantic wireless transmission here in 1901.
Fort Amherst.....	Prince Edward Island, near Rocky Point.	¹	222.0	Remaining earthworks of British fort built after 1758.

¹ Not yet formally established.

3.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—continued

Park	Location	Year Estab- lished	Area	Characteristics
			acres	
National Historic Parks—concluded				
Fort Anne.....	Annapolis Royal, N.S....	1917	31.0	Site of French fort first built about 1635, finally captured and occupied by British in 1710. Museum and well-preserved earthworks.
Fortress of Louisbourg.	Cape Breton Island, N.S., 25 miles from Sydney.	1940	13,000.0	Walled town built by French 1713-58 and demolished by British 1759. Being partially reconstructed. Archaeological investigations in progress.
Halifax Citadel.....	Halifax, N.S.....	1951	20.0	Fortress constructed in 1820s and in 1850s. Museum.
Port Royal.....	Port Royal, N.S., 8 miles from Annapolis Royal.	1940	20.5	Reconstruction of "Habitation"—first fort built in 1605 by Champlain and DeMonts.
Alexander Graham Bell	Baddeck, N.S.	1	21.0	Museum containing mechanical and documentary records of research by the inventor.
Grand Pré.....	Grand Pré, N.S.....	1957	20.0	Commemorates the story of the Acadians and the New England Planters. Museum.
Fort Beauséjour.....	New Brunswick, near Sackville.	1926	93.0	Site of French fort erected in mid-1700s. Museum.
Fort Chambly.....	Chambly, Que.....	1940	2.5	Fort built by English in 1709-11. Museum.
Fort Lennox.....	Île aux Noix, Que., near St. Paul.	1940	210.0	Fort built by English in 1820s.
Fort Malden.....	Amherstburg, Ont.....	1940	10.0	Site of defence post built in 1797-99. Museums.
Fort Wellington.....	Prescott, Ont.	1940	12.0	Military garrison 1812-66.
Woodside.....	Kitchener, Ont.....	1954	12.0	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Fort Prince of Wales...	Northern Manitoba, near Churchill.	1940	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
Lower Fort Garry....	Manitoba, 20 miles north of Winnipeg.	1951	13.0	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
Fort Battleford.....	Saskatchewan, 4 miles south of North Battle- ford.	1951	36.7	North West Mounted Police post built in 1876. Museum.
Fort Langley.....	Fort Langley, B.C.	1	11.0	Partially restored trading post founded 1827. Colony of British Columbia proclaimed here 1858.
Fort Rodd Hill.....	Esquimalt, B.C.....	1962	44.4	Extensive 19th century stone and concrete coastal fortifications.
Major National Historic Sites				
George Island.....	Halifax, N.S.....	1	12.5	Preserved harbour fortifications built in 1870s.
York Redoubt.....	Halifax, N.S.....	1	187.5	Perimeter harbour defence installations in use from 1778 to 1945.
Fort Gaspereau.....	Near Port Elgin, N.B.....	1	2.0	Site of 1751 French fort.

¹ Not yet formally established.

3.—Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites—concluded

Park	Location	Year Estab- lished	Area	Characteristics
			acres	
Major National Historic Sites—concl.				
St. Andrews Blockhouse	St. Andrews, N.B.....	1938	2.5	Built during War of 1812.
Martello Tower.....	Lancaster, N.B.....	1924	0.8	Harbour defence built during War of 1812.
Sir Wilfrid Laurier's Birthplace.....	St. Lin, Que.....	1941	0.5	Period restoration relating to early life of a famous Prime Minister.
Cartier-Brébeuf Park..	Quebec, Que.....	1	5.0	Park, possible wintering site of Jacques Cartier, 1535-36.
Old walls around City of Quebec.....	Quebec, Que.....	..	..	Former Quebec City fortifications.
Fort Coteau.....	Coteau du Lac, Que.....	1	9.5	Site of fort built in 1779.
Bellevue.....	Kingston, Ont.....	1964	1.2	House lived in by Sir John A. Macdonald about 1848.
Fort St. Joseph.....	St. Joseph's Island near Sault Ste. Marie, Ont.	1	47.0	Most westerly British fort, built in 1796.
Batoche Rectory.....	Near Duck Lake, Sask....	1954	7.0	On field of final battle of Northwest Rebellion, 1885. Only surviving building of that date.
Fish Creek Memorial Park.....	Near Rosthern, Sask.....	..	39.0	Commemorates Northwest Rebellion battle of 1885.
Palace Grand Theatre..	Dawson, Y.T.....	1959	--	Reconstruction of theatre of Gold Rush days.
S.S. Keno.....	Dawson, Y.T.....	1959	--	Preserved Yukon river-boat.
Yukon Sternwheeler...	Whitehorse, Y.T.....	1959	--	Yukon river-boat of 1930 period.

¹ Not yet formally established.

Evidence of the increasing attraction of Canada's National Parks and National Historic Parks and Sites is the growing numbers of visitors as shown in Table 4.

4.—Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1965-68

Park	1965	1966	1967	1968
	No.	No.	No.	No.
National Parks				
Terra Nova.....	66,180	108,738	179,647	292,795
Prince Edward Island.....	1,112,536	967,372	1,130,773	769,970
Cape Breton Highlands.....	624,942	729,443	851,653	810,651
Fundy.....	566,443	679,406	753,310	518,249
Georgian Bay Islands.....	8,371	8,361	10,438	14,927
Point Pelee.....	661,166	697,328	726,035	715,046
St. Lawrence Islands.....	67,109	60,330	122,304	149,580
Riding Mountain.....	681,313	687,959	738,724	731,172
Prince Albert.....	140,521	152,256	146,624	156,864
Banff.....	1,605,784	1,803,490	2,044,537	2,050,735
Elk Island.....	175,105	197,728	204,286	232,286
Jasper.....	480,102	522,658	595,164	652,186
Waterton Lakes.....	371,268	393,426	487,589	503,729
Glacier.....	705,150	767,206	917,264	885,947
Kootenay.....	548,515	638,812	722,743	684,519
Mount Revelstoke.....	706,015	741,457	872,367	894,286
Yoho.....	658,518	689,313	864,454	855,224
Wood Buffalo.....	..	..	..	..
Totals, National Parks.....	9,179,028	9,845,283	11,367,912	10,918,169

4.—Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1965-68—concluded

Park	1965	1966	1967	1968
	No.	No.	No.	No.
National Historic Parks and Sites¹				
Signal Hill.....	241,242	275,209	396,762	602,074
Fort Amherst.....	9,513	22,576	26,076	33,618
Fort Anne.....	64,551	66,534	74,428	68,783
Fortress of Louisbourg.....	113,148	148,072	193,127	194,653
Halifax Citadel.....	213,212	213,878	328,386	533,152
Port Royal Habitation.....	39,265	42,699	46,458	39,504
Alexander Graham Bell.....	106,228	110,158	121,804	108,351
Grand Pré.....	64,194	62,848	73,192	64,975
Fort Beauséjour.....	49,427	49,087	53,299	59,094
Carleton-Martello Tower.....	38,893	40,993	43,984	44,443
Prince of Wales Martello Tower.....	..	..	..	17,779
Fort Chambly.....	91,493	101,286	132,700	123,046
Fort Lennox.....	20,423	26,191	29,995	39,616
Sir Wilfrid Laurier's House.....	7,190	7,562	7,872	9,312
Fort Malden.....	38,916	52,670	64,025	68,432
Fort Wellington.....	52,167	40,917	60,495	76,799
Woodside.....	11,699	13,554	14,309	16,158
Bellevue House.....	..	..	..	29,052
Fort Prince of Wales.....	424	311	526	242
Lower Fort Garry.....	86,620	92,208	107,303	132,620
Fort Battleford.....	38,825	42,878	43,111	42,803
Batoche Rectory.....	7,855	8,869	9,580	12,994
Fort Langley.....	116,723	111,941	133,237	123,204
Fort Rodd Hill.....	32,922	36,614	58,810	79,051
Palace Grand Theatre.....	..	5,525	9,599	..
S.S. Kenos.....	..	6,857	3,250	9,033
Totals, National Historic Parks and Sites..	1,444,930	1,579,437	2,032,328	2,518,788
Grand Totals.....	10,623,958	11,424,720	13,400,240	13,436,957

¹ Sites for which visitor data are available.

Subsection 2.—Provincial Parks

Most of the provincial governments of Canada have established parks within their boundaries. Some of these, particularly in Quebec and Ontario, are wilderness areas set aside in order that some portions of the country might be retained in their natural state without change brought about by the hand of man. Most of them, however, are smaller areas of exceptional scenic or other interest which are easily accessible and are equipped or slated for future development as recreational parks with camping and picnic facilities. The more important parks in each province are mentioned briefly in the following paragraphs.

Newfoundland.—Altogether, 2,954 sq. miles of wilderness reservation and provincial parklands are administered by provincial government agencies in Newfoundland. All but 95 sq. miles of that area are contained in two wilderness reserves, which are designated as protected habitat for caribou and are administered by the Wildlife Division of the Department of Mines, Agriculture and Resources.

Of the 95 sq. miles of public parkland, 52 sq. miles are contained in two undeveloped park reservations and the remainder are in 34 provincial parks, 25 of which were open for public use in 1967 and the others were under construction. These parks are administered by the Provincial Park Service of the Department of Mines, Agriculture and Resources, and are operated for the preservation of natural environment. Most of them are located in wilderness areas and development is restricted to primitive picnic and camping areas. Park Regulations prohibit hunting and logging but sport fishing is permitted. Attendance for 1967 passed the 1,000,000-mark by mid-August, the increase for the year being estimated at nearly 40 p.c. over 1966.

Prince Edward Island.—Twenty areas have been developed as provincial parks including Strathgartney Park, a 40-acre tract of land on the Trans-Canada Highway between Charlottetown and Borden, which is an excellent picnic site and campground with its hardwood groves, fresh spring water and beautiful view over the West River and the surrounding country; Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park and Golf Course, comprising 296 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River; Jacques Cartier Park, an area of 18 acres at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island; Green Park, 45 acres on the Trout River, is an attractive combination of land, trees and water and is also of interest as a historic shipbuilding centre; Cabot Park at Malpeque, named in honour of the famous explorer, John Cabot, is a 30-acre area with beautiful sandy beaches and an interesting museum; and several small parks that have been developed or are under development. A fee of \$2 is charged for serviced tent and trailer sites and of \$1.50 for unserviced sites. The parks are maintained by the Department of Tourist Development.

Nova Scotia.—A provincial park system is being developed in Nova Scotia by the Department of Lands and Forests, which will include a network of picnic parks accessible from major highways for day-use only, and a series of camping parks to provide for overnight visitors. The need also is recognized for acquisition and development of provincial beaches, particularly along the warm waters of Northumberland Strait.

Basic policy adopted by the Department includes the provision of good basic facilities, leaving scope for private enterprise to offer more sophisticated items such as showers, etc. A fee of \$1.50 nightly is charged in camping parks but there is no entrance fee or charge in the picnic parks. Concessions are not permitted under present policy.

It is visualized that some 20 to 25 camping parks and 60 picnic parks will be required in the immediate future, in addition to beach developments. Apart from 1967, a steady and quite pronounced increase in visitation has been evident.

Among the major camping parks developed to date are Whycocomagh Park overlooking Bras d'Or Lake in Cape Breton; Laurie and Porter's Lake Parks near Halifax; Caribou Park on Northumberland Strait; Wentworth Park in the Wentworth Valley; Smiley Park in the Annapolis Valley and Islands Park on the south shore. Two new parks will be open in 1969—Ellenwood Lake Park near Yarmouth and Mira River Park between Sydney and Louisbourg—and work is progressing on five additional camping parks at various locations in the province.

New Brunswick.—The New Brunswick provincial park system, which is administered by the Department of Natural Resources, includes 17 recreational parks ranging in size from 25 to 200 acres, 28 picnic parks, 12 camping parks and five beach parks. Most of the park sites are located in rural areas, fairly evenly distributed throughout the province, and are adjacent to or easily accessible from main trunk roads. All parks contain tables, some form of toilet facility and a potable water supply but more elaborate facilities are available in the larger parks. No entrance fee is charged at any of the sites but a daily camping fee of \$1.50 to \$2 is in effect at 21 of the larger parks. In addition to the above, the Department maintains two wildlife parks—at Magnetic Hill near Moncton and at McGraw Brook on Highway 109—where various species of wildlife to be found in the province are displayed.

In 1967, more than 1,616,000 persons visited the provincial parks, 145,000 of them campers; 75 p.c. of the campers using park sites come from outside the province and about 40 p.c. of the day-use visitors are non-residents.

A five-year ARDA program of expansion and improvement of park and campground facilities is under way in the province, which includes the development of approximately

1,000 tent and trailer sites, accommodation for day-use of beaches, forest and wildlife recreation areas, scenic lookouts, etc., land purchase and provision of special facilities where warranted by intensity of use, such as boats, ramps, docks, canteens and playgrounds.

Quebec.—The Province of Quebec has seven provincial parks and 12 fish and game reserves. Four of the park areas are quite extensive. La Vérendrye Park, 140 miles northwest of Montreal, has an area of 4,953 sq. miles; Laurentide Park, 30 miles north of Quebec City, has 3,613 sq. miles; Mont Tremblant Park, 80 miles north of Montreal, 920 sq. miles; and Gaspésian Park, in the Gaspé Peninsula, 514 sq. miles. Mont Orford Park, situated 15 miles west of Sherbrooke, has an area of 16 sq. miles and Oka Park, near Oka, 1.5 sq. miles. Newest addition to the provincial parks is the St. Maurice Park, a 131-sq. mile area north of Shawinigan in Champlain County.

Fish and Game Reserves together occupy over 43,000 sq. miles. The Chibougamau Reserve, the Mistassini Reserve and the Assinica Reserve, all northwest of Lake St. John, have areas of 3,400, 5,200 and 3,850 sq. miles, respectively, and farther north is the James Bay Reserve with an area of 25,000 sq. miles. The Aiguebelle Reserve in Abitibi County has an area of 100 sq. miles, the Baie Comeau and Chicoutimi Reserves in the Lake St. John area, 480 and 678 sq. miles, respectively, and the Kipawa Reserve in Témiscamingue County, 3,090 sq. miles. Adjoining Gaspésian Park are the Chic-Chocs and Matane Reserves with areas of 325 sq. miles and 500 sq. miles, and in Rimouski County is the Horton Reserve with an area of 310 sq. miles; this is the only reserve operated for hunting as well as for fishing.

These parks and reserves are wilderness areas of great scenic interest and are for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mont Orford Park and Oka Park, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant Park, located close to a famous year-round recreational area, is easily reached in summer by highway from Montreal and is very popular for tent or trailer camping and for swimming and picnicking. Mont Orford has an 18-hole golf course and, in winter, is the rendezvous of Canadian and United States skiers and the site of the Canadian Alpine downhill and slalom championship competitions. Hunting is forbidden in all parks and reserves except Horton, Kipawa and James Bay. In recent years, controlled moose hunting in Laurentide, La Vérendrye and Matane Parks has been allowed to remove the surplus population.

Salmon fishing is available in the Gaspé area where the government maintains facilities for anglers along the Port Daniel, St. Jean, Cap-Chat, Matane, Matapédia and Petite Cascapédia Rivers. Facilities are also provided along the estuary of the Moisie River on the north shore of the St. Lawrence River about 15 miles east of Sept Îles, as well as at Petit Saguenay and Laval.

The ever-increasing popularity of camping in Quebec has prompted the Department's Park Service to establish camping facilities. Twenty areas are now well organized for this purpose—Val Jalbert, one mile east of Roberval in Lake St. John County; Grand Métis, six miles from Mont Joli, and Cap Bon Ami, both in the Gaspé Peninsula: Batiscan, on Highway 2, 25 miles east of Trois-Rivières; St. Jean, Île d'Orléans, Stoneham, Ville-neuve and Beaumont in the vicinity of Quebec City; des Voltigeurs, Waterloo and Mont Orford in the Eastern Townships; Brossard, Laprairie, Côte Ste. Catherine, Pointe-aux-Cascades and Oka close to Montreal; and Soulanges, St. Zotique and Rivière-Beaudette near Valleyfield.

Ontario.—In 1968 there were 95 provincial parks available for public use in Ontario and several new parks were in process of development; 66 other areas, encompassing 1,619 sq. miles, were acquired for future development. The total area of the Ontario provincial park system was about 13,144 sq. miles.

The seven largest parks—Polar Bear, Algonquin, Quetico, Lake Superior, Missinaibi, Killarney and Sibley—together have an area of about 12,724 sq. miles. Polar Bear Park is the largest in the system, occupying 7,000 sq. miles of Hudson Bay Lowland bordering Hudson and James Bays containing boreal forest, tundra and arctic flora and fauna. Algonquin Park is a beautiful area 2,910 sq. miles in extent, 180 miles north of Toronto and 105 miles west of Ottawa; it has 14 picnic and campgrounds which are accessible by car from Highway 60 and offers particularly fine canoeing opportunities in its interior. Killarney Park is accessible by Highway 637 from Highway 69 south of Sudbury. Quetico Park, covering 1,750 sq. miles, is accessible by Highway 11 at the Dawson Trail Campground on French Lake and also by water by way of Basswood Lake in the south. Highway 17 north from Sault Ste. Marie gives access to Lake Superior Park, and Sibley Park may be reached by road from Highway 17 east from Port Arthur. Missinaibi Park, 176 sq. miles in extent, surrounds Missinaibi Lake, 55 miles north of Chapleau. The lake is renowned for walleye fishing and is the site of an important Hudson Bay Trading Post.

In 1967 a new policy of park classification and parkland zoning was announced to achieve a balanced park system and to establish a framework for positive and effective development and management. Five park classes were established—primitive, natural environment or heritage, wild river, nature reserve, and recreation. Comparable zones within parks were also established—primitive, natural, historic, multiple use, and recreation.

Under the Wilderness Areas Act, which came into effect in 1959, 45 areas have been established. These areas, widely distributed across the province, vary in size, character and significance but all are regarded as important for their historic, scientific, aesthetic or cultural values. The largest is a 938-sq. mile block covering the Pukaskwa area on the north shore of Lake Superior. Most other wilderness areas are one square mile or less in size.

Ontario has made another advance in meeting the rising pressures for recreational space by applying the concept of the recreational reserve. The recently created North Georgian Bay Recreational Reserve covers 4,500 sq. miles of interesting country lying generally between Algoma and Parry Sound on the north shore of Georgian Bay and including the channel between Manitoulin Island and the mainland, the 30,000 Islands, the famous route of the voyageurs by way of the French River, the remaining shoreline of Lake Nipissing and the LaCloche Mountains. The Reserve is not a provincial park nor is it a Wilderness Area but an area following a normal course of development which is already used extensively for recreation. The plan is, by guiding the evolution of the area, to realize its full potential as a recreational paradise serving all types of needs and co-existing with a landscape of normal activity.

Ontario's vast lakeland areas make this province a vacation paradise and the number of park visitors increases year by year. Attendance in 1967 was 10,192,533 persons and campers numbered 1,155,091. The charge for vehicle entry in 1968 was \$1 a day or \$10 a year, and the camping charge was \$2.50 a night which included vehicle entry. Picnic tables, fireplaces, fuelwood, tested drinking water and washrooms are provided at supervised tent and trailer campgrounds. Trailer sanitation stations are new additions in many parks. Campsites numbered approximately 16,200 in 1967.

Interpretative and naturalist programs are being continually expanded and such services as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature trails were available in 34 parks in 1967.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests. Detailed information is contained in various brochures available on request from the Department of Lands and Forests, Parliament Buildings, Toronto.

Manitoba.—The provincial park system of Manitoba, administered by the Parks Branch of the Department of Tourism and Recreation, consists of four major classifications of outdoor recreation development: provincial parks, which are large-area parks with a variety of natural attractions suited to many outdoor activities; recreation areas, the

natural attractions of which are modified to accommodate recreational activities of an intensive nature; waysides, or highway wayside parks which enhance travel routes and provide attractive rest stops; and heritage areas, which are areas of outstanding scenic beauty or have natural, physical or historic features of special provincial interest.

There are nine provincial parks in Manitoba. In addition to six established parks, three Centennial parks are under development. Birds Hill Provincial Park, near Winnipeg, comprises an 8,400-acre playground and an 80-acre man-made lake within easy reach of the Manitoba capital. In south-central Manitoba, Spruce Woods Provincial Park is set in an area thriving with wildlife, forest and wildflowers along the valley of the Assiniboine River, and also featuring lookouts over the shifting sand dunes of the Bald Head Hills, the province's only truly desert area. Near the western boundary of the province, Assinippi Provincial Park is under development. It centres on the southern end of a 45-mile-long man-made lake now forming behind the Shellmouth Dam on the Assiniboine. The Shellmouth reservoir will provide for development of water-based facilities on a large scale for western Manitoba residents and visitors.

Manitoba provincial parks have a total area of 2,858 sq. miles, of which 1,945 sq. miles are within provincial forests. In addition, there are 41 recreation areas ranging in size from 2.5 acres to 2,000 acres, and 81 roadside parks. Most of the recreation areas offer swimming, camping and picnicking facilities, and 48 of the roadside parks contain public campgrounds. Hunting and fishing lodges are common and accommodation in some of the parks ranges from modern resorts and motels to hotels and cabins. Golf, tennis, boating, swimming, fishing, riding and hiking facilities are available, as well as children's playgrounds. A major ski area and mazes of power toboggan trails provide for growing participation in wintertime outdoor activities. About 115 commercial concessions operate within the parks system, offering a variety of services ranging from restaurants to riding stables and boat marinas.

Rehabilitation and expansion of existing recreation areas is continuing in an effort to provide new camping and improved day-use facilities. Development is continuing, too, in the heritage area program to preserve and interpret sites, large and small, illustrating the natural and human history of the province. Surveys have been conducted to study potentials along the shorelines of Lake Winnipeg and Lake Manitoba and provide guidance for future development of recreational facilities in Manitoba's interlake area.

Popularity of the Manitoba Provincial Parks and recreation areas is marked by impressive annual increases in the numbers of park visitors. In the year ended Mar. 31, 1967, the number of park visitors was estimated at 1,800,000. An estimated 52,000 families and groups in tents, trailers, and truck campers utilized campground facilities across the province. The admission fee to Manitoba's provincial parks is 50 cents a day or \$3 for the season.

Saskatchewan.—Saskatchewan's 14 provincial parks, comprising 1,803 sq. miles of recreation land, range from forested parklands in the midst of the sprawling prairie to valley parks between the soft hillsides of the legendary Qu'Appelle and rugged northernland settings. Each park offers camping, picnicking, boating and swimming facilities and a variety of recreational activities. Eleven of the parks operate a supervised recreation program of regularly scheduled activities for all ages—arts and crafts, hikes along park nature trails, social functions and numerous team sports. Moose Mountain boasts a dignified split-fieldstone chalet and other modern cabin accommodation. Modern cabin facilities are also found at Cypress Hills, Duck Mountain and Greenwater Parks. In Cypress Hills Park, with its unique forest cover of stately lodgepole pine and white spruce, are found elk, antelope, deer, beaver, sharp-tailed grouse and quiet trout-stocked streams. In Duck Mountain, Moose Mountain and Greenwater Parks, moose, elk and bear appear variously and deer and beaver are common to all, as are several varieties of grouse and many species of water and smaller land birds. Golf courses are found at Cypress Hills, Moose Mountain, Duck Mountain and Katapwa Parks. Pike, pickerel and perch abound in almost all park lakes and brook and rainbow trout are ardently sought in northern waters.

Canoe routes and commercially operated fishing and hunting camps are found in the province's three wilderness parks—La Ronge, Nipawin and Meadow Lake. Hundreds of roadside camp and picnic grounds are in operation. Four official Trans-Canada Highway Campsites and several other camping areas dot the province's 406-mile stretch of Trans-Canada Highway. Here campers and picnickers relax in picturesque settings, contrasting the flat prairie highway. Saskatchewan operates 68 regional parks which, although designed primarily with local patrons in mind, also attract large numbers of tourists.

Marked sites of historic interest number 143 and include the Touchwood Hills Hudson's Bay Post, Cannington Manor and Wood Mountain Historic Parks.

Alberta.—In Alberta, 47 provincial parks have been established, 44 of which, with a total area of approximately 172 sq. miles, are in use and continuing development. Cypress Hills Provincial Park with an area of 78 sq. miles is the largest and is situated in the southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Entrance, Garner Lake, Gooseberry Lake, Hommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Lesser Slave Lake, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, Moose Lake, O'Brien, Park Lake, Pembina River, Pigeon Lake, Red Lodge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, The Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford, Writing-on-Stone. These parks are generally provided with picnic, camping and playground facilities and are maintained by the Department of Lands and Forests primarily for the recreation and enjoyment of the residents of the province. There is a park within easy reach of almost every town. The most northerly park is Lac Cardinal, about 28 miles southwest of Peace River, and the southernmost park is Writing-on-Stone which adjoins the Alberta-Montana border. Alberta's provincial parks were visited by 4,081,452 tourists and vacationists in 1967.

In addition to the recreational parks, 24 sites have been established to mark and preserve locations of historic interest. They include: Athabasca Landing, Buckingham House, Bugnet Plantation, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, Fort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, Hay Lakes Telegraph Station, Massacre Butte, Ribstones, Rocky Mountain House Fort, Standoff, Stephansson, Twelve Foot Davis, Shaw Woolen Mill, Rev. George McDougall's Death Site, Fort McLeod, Indian Stone Pile, St. Joseph Industrial School and Old Women's Buffalo Jump.

Provided also for Albertans are the Willmore Wilderness Provincial Park, which adjoins Jasper National Park in the north and extends along the British Columbia border, and two wilderness areas established under the Forest Reserves Act in 1961. Willmore Wilderness Provincial Park has an area of 2,149 sq. miles, Siffleur Wilderness 159 sq. miles and White Goat Wilderness 489 sq. miles. The Ghost River Wilderness area of 59 sq. miles was established under the Provincial Parks Act in 1967. The wilderness areas have been set aside to preserve as far as possible the natural scene and are not subject to any development or provided with roads.

British Columbia.—There are 260 (170 developed) provincial parks in British Columbia, having a total area of about 10,038 sq. miles. These parks are classified as A, B and C. Class A parks are intended to preserve outstanding natural, scenic and historic features of the province for public recreation; they have a high degree of legislative protection against exploitation and alienation. Class B parks are also primarily for the protection of natural attractions but other resource use may be permitted if it does not unduly impair recreational values. Class C parks are intended primarily for the use of local residents and are generally managed by local park boards. Nature Conservancy Areas in any park are fully protected from resource development and are dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park and outstanding scenic and mountain reserves such as Garibaldi,

Mount Robson, Manning and Bowron Lakes Parks. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forested parks that have achieved tremendous popularity with tourists; the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The famous gold town of Barkerville has been restored and became the first Provincial Historic Park; Fort Steele in the East Kootenay area is also being restored to preserve another of British Columbia's pioneer settlements. Twelve marine parks with mooring facilities and campsites have been developed on the islands of the Strait of Georgia for the benefit of water-borne vacationers.

The popularity of British Columbia's parks, with their integrated campsites and picnic areas, is attested by the fact that about 6,105,000 park visits were recorded during 1967; about 25 p.c. of the visitors were campers and the remainder day visitors. Records show that Mount Seymour, Cultus Lake and Golden Ears Parks were the most heavily used.

Subsection 3.—Ottawa, Canada's National Capital*

Canada's capital city lies in a magnificent natural setting, its hub high on the limestone bluffs bordering the Ottawa River where it tumbles over the Chaudière Falls and where, a short distance downstream, the lazy Rideau River falls in twin curtains over the cliffs from the south and the once-turbulent Gatineau River flows in from the north. Here Champlain paused and portaged on his way westward in 1613. The priests, soldiers and traders who followed him travelled past these cliffs and around the rapids. By this place passed most of the great overland explorers. Champlain called the river "la grande rivière des Algoumequins" and early English traders called it the Grand River. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of a tribe of Indians from Lake Huron who traded with the French in the seventeenth century. They carried their furs by the river that now bears their name. The first settlement in this region is associated with an American from Massachusetts, Philemon Wright, who, in 1800, located on the north shore of the river where Hull stands today, bringing with him families and tradesmen and forming the nucleus of a busy community. Taking advantage of Britain's need for squared timber, Philemon Wright ran the first raft of white pine to Quebec in 1806, and started the Ottawa River squared timber trade that soon came to be fostered by British tariff concessions. This was the beginning of a great industry that remained the life blood of the community for half a century.

Settlement on the south side of the river did not begin in earnest until a generation later. During the War of 1812 communications by the St. Lawrence River, the main route to the settled area in Upper Canada, had been under American attack and a safer water route between Montreal and the Great Lakes was considered an urgent need for the future. Ten years were spent in sporadic investigation and consideration of a route by the Rideau and Cataraqui River systems and finally, in 1826, Lieutenant-Colonel John By of the Royal Engineers was sent to the Chaudière to build a canal from that point to Kingston. The next year two companies of Royal Sappers and Miners, numbering 162 men, began the construction. To Colonel By also goes the credit of planning the original townsite which was, in 1827, named Bytown in his honour. Where Ottawa's central area is today, the Earl of Dalhousie, the then Governor-in-Chief, had wisely secured commanding ground for the Crown in 1823 and, adjacent to this, Colonel By laid out two settlements called Upper Town and Lower Town, separated by part of the Government lands called Barrack Hill. The canal was finished in 1832 and the town that sprouted around Colonel By's military camp began to grow and prosper. Stores and banks were set up, churches and schools were built and a little manufacturing community was started in New Edinburgh near Rideau Falls.

Bytown was now the inland centre of the squared timber trade and by 1850 could boast of some fine stone buildings, among them the home of Thomas MacKay which

* Revised by the Public Relations Division, National Capital Commission, Ottawa.

today forms the central part of the residence of the Governor General of Canada. A change then occurred in the timber industry, the British system of preferential import duties on squared white and red pine logs was abandoned and trade began to decline. However, by this time the accessible forest stands of the eastern United States were depleted and sawn lumber was needed to house a growing population. Also, the American railway and canal network had extended to the Canadian border, making transportation easy. Encouraged by these favourable conditions and the newly recognized availability of hydro-electric power, a group of American and other lumbermen came to Bytown, beginning in 1853, and established sawmills by the Chaudière Falls. Soon the islands about the falls and the flats on both shores were covered with lumber piles and loaded barges were on their way to the American market. The sawmill industry began its rise to dominating importance.

At the beginning of 1855, Bytown became a city and took the name Ottawa, just in time to receive a great honour and to assume a great responsibility. The United Province of Canada, since its formation in 1841, had shuttled its capital between Kingston, Toronto, Montreal and Quebec and was now trying to agree on a permanent site. At the end of 1857 Queen Victoria settled the dispute by choosing Ottawa. Government buildings for the new capital were designed and contracts were let in 1859 for their construction. However, the task was hard and the cost much greater than expected and it was not until 1866 that the government of the Province of Canada actually moved to Ottawa. The next year the first Parliament of the new Dominion of Canada met in an incomplete Parliament Building, situated on the former Barrack Hill.

The nation enjoyed a brief prosperity during most of the next decade. Ottawa grew and the government expanded as the Dominion extended its authority over more and more of British North America. In 1871, shortly after Confederation, the city had a population of about 22,000. Many fine homes and stores in stone and brick were built. The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarged. An old wooden City Hall near the Canal was replaced in 1876 by a fine stone building and a large post office was erected at the city's centre. By the end of the nineteenth century, Ottawa was a flourishing industrial centre with a population of 59,000. It remained the hub of the lumbering industry of Eastern Canada, had the largest paper mills in the country and the leading match factory in the world. However, little effort had been made to preserve or enhance its natural beauty until the Ottawa Improvement Commission was set up in 1899 and the Driveway along the Rideau Canal was begun. Even so, progress was slow in this direction, but in the years up to the beginning of the First World War the city centre began to take on a new face. Many new government buildings were erected—laboratories, the Dominion Observatory and the Geodetic Building at the Experimental Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian Mint and the Connaught Building. In 1912, the Grand Trunk Railway completed construction of the Union Station and of the French renaissance-style Chateau Laurier whose turrets continue to grace the Ottawa skyline. During this period several studies were made and plans recommended for the improvement of the national capital but these were deferred because of the War and for other reasons. Fire destroyed the Parliament Building in 1916, leaving standing only the octagonal library now forming part of the magnificent building of modern Gothic architecture which replaced it but was ten years in the building. The city beautification program was continued by the Ottawa Improvement Commission on a slightly increased budget until 1927; in that year the Commission was reconstituted as the Federal District Commission and the program then proceeded at a more accelerated rate. The second Commission was succeeded in 1959 by the National Capital Commission.

The City of Ottawa today, with its population of close to 300,000, is well on the way to becoming a national capital of enduring beauty and grace. It is a self-governing municipality, administered by an elected City Council, but there are underlying differences which set it apart from all other major Canadian centres. Historically, it has always been the meeting place for the two founding peoples. It is the national seat of Govern-

ment and throughout the years the federal authorities have recognized the need of creating in and around the national capital an area of pride, not only for the residents of the city and its environs but for all Canadians.

Much of the work of the National Capital Commission hinges on the implementation of a long-range Master Plan, developed by the late Jacques Gréber, a famed French town-planner. The Gréber Plan tabled in the House of Commons in 1951, although not officially recognized by the Provinces of Quebec and Ontario, is the basis of much that has been accomplished. In fact, ten years after its publication it was reported that all of its major proposals were in process of realization.

Success of the Plan, now and in the future, is dependent on co-operation between the Federal Government, the governments of the Provinces of Ontario and Quebec, the cities of Ottawa, Hull and Vanier City and about sixty-five other autonomous municipalities in the National Capital Region. The Plan itself was conceived as a memorial to all Canadians who gave their lives in the defence of Canada during the Second World War and was projected over a fifty-year period. It called first for the establishment of a National Capital Region encompassing some 900 sq. miles but later, in 1959, this was doubled to 1,800 sq. miles—about half in Ontario and half in Quebec. In accordance with its proposals, large "open spaces" are being provided in the Ottawa-Hull area, part of which involves the restoration of the shores of the waterways. Major restorations have taken place at Rideau Falls opposite the Ottawa City Hall, at Jacques Cartier Park in Hull, and at Vincent Massey Park which is a 75-acre urban park in the heart of Ottawa, linked with the 50-acre Hog's Back Park surrounding the limestone chasm of Prince of Wales Falls on the Rideau River. In the City of Hull, the Commission has also developed Brébeuf Park on the Ottawa River and Leamy Lake Park on the shore of the Gatineau River. Forty miles of riverfront land are under the control of the Commission and countless delightful areas are accessible to the public. There are more than 60 miles of wide, landscaped driveways throughout Ottawa and environs which will be extended by another 90 miles in coming years. In addition the Commission maintains seven city-owned parks in Ottawa, including Rockcliffe and Strathcona Parks. At present Ottawa has 4,000 acres of open space.

The relocation of government buildings to suitable scattered sites has been under way for several years. The first development took place at Tunney's Pasture located on the Ottawa River in the west-central area of Ottawa. The Pasture now contains 18 buildings of various sizes. Confederation Heights, in the south-central area adjoining Hog's Back Park, now contains six attractive and functional buildings that house Government Departments, and the large Government Printing Bureau was established in Hull. In all, the grounds of more than 140 government buildings are cared for by the Commission.

Two key proposals in the Master Plan with long-range effects on Ottawa's future are the creation of the Greenbelt and the removal of railway trackage from the central sections. The Greenbelt, designed to control urban sprawl and to provide sites for governmental, industrial and research development, is a unique planning measure in North America. Within its 41,500 acres the Commission encourages agriculture, reforestation, public recreation areas and various other governmental and private sector uses.

Railway relocation, certainly the most important element of the National Capital Plan, has been largely completed. It involved removal of 32 miles of track, much of it in the central sections of the city, elimination of 72 level crossings, many in high density urbanized areas, and is a prime consideration in Federal Government redevelopment of LeBreton Flats, the old Union Station sector in downtown Ottawa which was redeveloped for the Centennial celebrations, and sections of Sussex Drive near the approaches of the Macdonald-Cartier Bridge linking Ottawa and Hull.

The National Capital Commission opened two beautiful new parkways in Ottawa in time for the Centennial of Confederation—Colonel By Drive, extending about four and a half miles from Hog's Back to Rideau Street, and the Ottawa River Parkway, an eight-mile drive with sweeping curves from about Britannia to Wellington Street near the Garden of the Provinces.

North of Ottawa and Hull, in Quebec, an 88,000-acre recreation area known as Gatineau Park has been developed by the Commission. It is a wilderness area, extending northward from Hull for 35 miles. With 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites and walking trails, the park is one of the finest recreation areas in Canada. It is enjoyed by more than 1,000,000 visitors each year.

As part of its program of development, the Commission is engaged in regional planning, encompassing both long-range and short-term programs throughout the 1,800-sq. mile Region. It gives advisory aid to municipalities on request, and is empowered to give financial aid in special circumstances.

The Commission has 20 members, representing all the provinces, and employs between 600 and 800 people, depending on season, in carrying out its development and maintenance programs. It reports to Parliament through the Minister of Fisheries and Forestry.

Section 3.—Wildlife Resources and Conservation*

Wildlife in Canada is an important renewable natural resource. In the early days wildlife was, and in remote areas still is, a form of sustenance in the hinterland, and trade in fur determined the course of exploration and settlement. During the period of the opening up of the country, a number of mammals and birds became seriously depleted or extinct. The passenger pigeon, the great auk and the Labrador duck became extinct, the buffalo vanished from the prairies, and elk, prong-horn antelope, and muskoxen were reduced to small fractions of their former numbers. Wildlife habitat has been reduced by the cutting and burning of the forests, the pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Wildlife has been changed and influenced by man to the degree that he has changed and influenced the environment for wildlife. The arctic and alpine tundra, one of Canada's major vegetational regions, has been changed hardly at all; the adjacent subarctic and subalpine non-commercial forests have been changed principally as a result of increased human travel causing more forest fires; the great forest farther south has not lost its real character through being managed for commercial use; cultivable lands, whether originally forest or grassland, have completely changed but often they and the managed forest are better for some forms of wildlife than the original wilderness. There are more moose, deer, ruffed grouse and probably more coyotes than in Indian days. Fur species, such as beaver and muskrat, are easily managed and many small mammals and birds thrive better in fields and woodlots than in the virgin forests, provided that they are not poisoned by pesticides. At the present time, the harvestable surplus of game and fur species across Canada is seldom fully utilized and it is quite clear that wildlife will remain abundant wherever there is suitable habitat and enlightened management.

Thus, Canada today is known throughout the world for the wealth and variety of its wildlife. It maintains most or all the existing stocks of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines, to mention a few. And these animals exist not only because of the vastness of their habitat but also because of man's efforts to preserve them. There is evidence of concern about the preservation of wildlife by the early Canadians; there were game laws in force in the original provinces when all but a few thousand acres of land were still the patrimony of the Indians. In 1885 pioneer conservationists were instrumental in establishing Banff Park in Alberta, and in 1887 a bird sanctuary, the first on the Continent, was established at Last Mountain Lake in Saskatchewan. Concern to preserve Canada's wildlife heritage led to the complete protection of wood bison in 1893 and to the purchase and establishment of a nucleus herd of plains bison at Wainwright in Alberta in 1907. Thus was formed the basis of wildlife conservation efforts, which, for a long time, took the form of protection of certain species from destruction by man or predator. Better knowledge of nature's operations and recognition that many factors combine

* The 1968 Year Book contains a special article on "Animal Life in Canada Today", prepared by scientists of the Zoology Division, National Museums of Canada, under the direction of E. L. Bousfield, Chief Zoologist.

to cause fluctuation in wildlife numbers are now being reflected in scientifically based hunting seasons and limits. The science of animal numbers is new and sometimes runs counter to popular prejudice but it is well understood that any area will support only so many animals, and species that are highly productive must have a quick turnover. Consideration of wildlife must never be separated from consideration of its environment and if the environment is fully stocked the annual increment need only replace the losses. All extra is surplus, only part of which is taken by predators and part, if the animal is a game species, by man.

As a natural resource, wildlife within the provinces comes under the jurisdiction of the respective provincial governments.* Wildlife on federal lands and certain problems of national or international interest with respect to research and management are the concern of the Federal Government and are dealt with mainly by the Canadian Wildlife Service as described under the next heading.

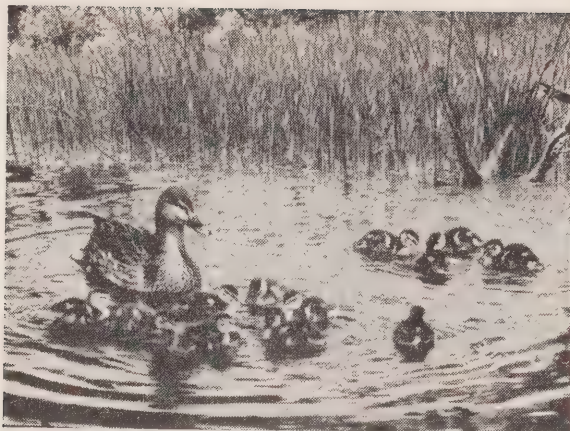
The Canadian Wildlife Service.—The Canadian Wildlife Service deals with most wildlife problems within the jurisdiction of the Federal Government. Organized in 1947 to meet the growing need for scientific research in wildlife management, it is now a Branch of the Department of Indian Affairs and Northern Development. The Service conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory and the National Parks, advises the agencies concerned with wildlife management and co-operates in the application of such advice. It administers the Migratory Birds Convention Act and provides co-ordination and advice for the administration of the Game Export Act in the provinces. The Service also deals with national and international problems relating to wildlife resources and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. The Canadian Wildlife Service is responsible for recommending the annual revision of the Migratory Birds Regulations, which govern open seasons, bag limits and hunting practices for migratory game birds. The Act and Regulations are enforced by the Royal Canadian Mounted Police and, in both administration and enforcement, co-operation is received from provincial authorities. There are 95 migratory bird sanctuaries in Canada, having a total area of 44,942 sq. miles. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada, as well as in the United States.

A national wildlife policy and program was tabled in the House of Commons in 1966 after comprehensive discussions with the provinces and citizens' conservation organizations. This policy provides for research and management in which there will be co-operation with the provinces on common problems, and it establishes guidelines and goals for federal research programs.

The population of barren-ground caribou, which had been seriously declining, showed an encouraging increase in 1967, when a range-wide survey counted 357,000 animals. In April 1966, the Service began an intensive study of herds in the Keewatin and northern Manitoba to provide data for management. Major studies of wolf-caribou relationships and of the Arctic fox were completed, and others are continuing. Research is also being done on mink, muskrat, beaver and polar and grizzly bear. Big game mammals in the National Parks are under continued study, special attention being given to mountain sheep and elk in the mountain parks. Ecological studies are receiving more emphasis, particularly those of areas where developments might disturb the habitat of wildlife. In Wood Buffalo National Park, problems of disease and low reproductive rates among bison

* The conservation of wild fur-bearing animals in the different provinces is discussed in the Fisheries and Furs Chapter, Part II, and information on provincial conservation of fisheries resources is given in Part I of the same Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to international fisheries conservation (see Index).



Concern for the disappearance of habitat for waterfowl has prompted the Federal Government to purchase or lease large tracts of wetlands so that they may be left in their natural state and serve as breeding grounds for these migrants.

have been investigated. Studies of the relationships between forests and wildlife in New Brunswick are continuing.

The loss of wetlands to drainage and filling for agricultural and other purposes poses a serious threat to waterfowl. The Service is participating with the provinces in a major program of preserving wetlands by purchase and long-term lease. A program to preserve about 4,000,000 acres of wetlands began during 1967 and at the end of March 1968 approximately 20,000 acres had been purchased at a cost of over \$1,000,000 and leases had been taken for 28,000 acres at a cost of \$167,000. The annual cost for leasing important wetlands will rise to \$5,000,000 during the next 10 years.

Much time has been devoted to species greatly reduced in number or in danger of extinction, such as the Ipswich sparrow, the trumpeter swan and the whooping crane. Six eggs of the whooping crane were taken from Wood Buffalo National Park in 1967 and 10 in 1968 to provide the nucleus of a captive breeding population. Eleven progeny from these eggs are being reared and the young will be released into the wild when a sufficiently large supply of breeding birds has been developed.

An annual mail questionnaire survey of a sample of waterfowl hunters, based on names of purchasers of the Canada migratory game bird hunting permit which was first sold in 1966, provides estimates of the size of the harvest and where it is taken. Another annual survey provides estimates of the species and age composition of the major game species. During the 1967-68 waterfowl seasons about 385,000 hunters purchased permits and harvested 3,500,000 game ducks, other than sea ducks, as well as lesser numbers of many other migratory game birds. Other continuing programs include an annual survey of crop



Wildlife Services specialists tag a polar bear so that his movements on the sea ice may be traced. Polar bear studies are part of the assessment of wildlife population in the Northwest Territories to further their conservation and management.

damage in the prairie provinces, annual surveys of waterfowl populations and habitat conditions in Western Canada, bird-banding, and participation in a program to reduce bird hazards at airports. Substitutes for lead shot are being studied in order to eliminate the large annual loss of waterfowl from lead poisoning. Pesticide research aims at measuring effects on wild animals of the environmental contamination by toxic chemicals; populations of fish, small mammals, songbirds, raptors and aquatic birds are at present under study.

Subjects of research in limnology include productivity of National Park waters and the biology of fish and associated fauna. Adequate stocks of fish are maintained through modern methods of management, where they can be applied without detriment to the aesthetic values of the areas concerned.

The Service research staff totals about 70. Specialists covering mammalogy, limnology, migratory bird populations, migratory bird habitat, ARDA programs, pesticides, pathology and biometrics are stationed at the head office in Ottawa. Offices are located in Fort Smith and Inuvik, N.W.T.; Whitehorse, Y.T.; Vancouver, B.C.; Edmonton and Calgary, Alta.; Saskatoon, Sask.; Winnipeg, Man.; Ottawa and Aurora, Ont.; Quebec City, Que.; Fredericton and Sackville, N.B.; Halifax, N.S.; and St. John's, Nfld. Headquarters for the Western Region is in Edmonton and for the Eastern Region in Ottawa. Sixteen officers are engaged in an inventory of wildlife land capability under the ARDA program (see Chapter X). A number of university graduates and undergraduates are engaged annually to assist in summer field work; 16 scholarships of \$1,200 were awarded in 1967 to graduate students in wildlife and allied fields.

PART III.—CLIMATE AND TIME ZONES*

Section 1.—Climate

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean.

* Sections 1 and 2 of this part were prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprehensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that textual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp. 33-77. A reprint is available from the above source giving the complete textual and tabular data. A special article on The Climate of the Canadian Arctic appears in the 1967 Year Book at pp. 55-74, an augmented reprint of which is also available from the Meteorological Branch.

The following table gives temperature and precipitation data for typical stations in the various regions of Canada. Temperatures in this table refer to observations taken in a thermometer shelter which has been placed in a representative location with the thermometer bulbs four feet above the surface of the ground. Mean January and July temperature data are based on records over the 30-year period from 1931 to 1960 except for far northern stations where the available period of record is shorter. After an average temperature is obtained for each day in January over a 30-year period, the mean January temperature may be arrived at by striking a mean of these 930 daily values. The mean July temperatures may be obtained in a similar manner. The highest and lowest temperatures on record refer to the absolute extremes for the entire period of record at each station. Average dates are shown for the last occurrence in spring of a temperature of 32°F or lower and for the first occurrence in autumn of freezing temperatures at the four-foot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught and then measured to one hundredth of an inch with a simple measuring device. Freshly fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Total precipitation values as shown in the table are the sum of the total rainfall and one tenth of the total snowfall. For the purposes of this table, a day with precipitation is one on which at least one hundredth of an inch of rain or one tenth of an inch of snow has fallen.

Temperature and Precipitation Data for Typical Stations in the Various Districts

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F or Lower)		Total (All Forms) ¹	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
Newfoundland—							in.	in.	
Island of Newfoundland—									
Belle Isle.....	13.5	49.1	73	-31	June 19	Sept. 24	33.56	92.0	143
Gander.....	20.8	62.3	96	-17	June 1	Oct. 3	40.35	127.1	201
St. Andrew's.....	24.6	59.3	81	-11	June 11	Sept. 28	42.66	64.6	171
St. John's.....	24.3	59.7	93	-21	June 2	Oct. 10	60.98	149.7	207
Labrador—									
Cartwright.....	7.5	55.7	97	-36	June 26	Sept. 9	38.15	183.1	179
Goose.....	2.2	61.4	100	-38	June 10	Sept. 14	32.93	157.6	173
Maritime Provinces—									
Prince Edward Island—									
Charlottetown.....	19.6	65.6	98	-23	May 8	Oct. 19	43.49	105.0	166
Nova Scotia—									
Annapolis Royal.....	25.5	65.3	91	-13	May 20	Oct. 6	45.61	75.8	154
Halifax.....	26.0	65.3	99	-21	May 13	Oct. 12	54.39	70.9	156
Sydney.....	24.3	64.9	98	-25	May 29	Oct. 13	51.37	95.5	176
Yarmouth.....	27.7	61.9	86	-12	May 3	Oct. 26	50.00	81.7	158
New Brunswick—									
Chatham.....	14.8	66.7	102	-43	May 21	Sept. 28	41.29	114.2	154
Grand Falls.....	10.6	65.0	98	-46	May 28	Sept. 20	40.50	108.1	104
Moncton.....	17.8	65.6	99	-36	May 23	Sept. 22	40.96	108.6	155
Saint John.....	19.5	63.0	94	-28	May 21	Sept. 29	53.57	97.7	156
Quebec—									
Northern—									
Fort Chimo.....	-11.0	53.3	90	-51	June 27	Aug. 10	16.47	69.5	146
Knob Lake.....	-9.4	55.1	88	-59	June 19	Aug. 25	29.40	134.5	185
Nitchequon.....	-9.1	56.7	90	-57	June 14	Sept. 13	29.64	108.4	193
Port Harrison.....	-13.0	48.0	86	-57	July 5	Aug. 20	15.51	64.5	134
Southern—									
Bagotville.....	3.5	64.2	96	-46	June 1	Sept. 16	37.67	127.0	175
Father Point.....	12.5	59.3	99	-33	May 22	Sept. 26	32.73	110.7	154
Montreal.....	16.3	70.8	97	-29	Apr. 28	Oct. 17	41.19	98.6	167
Quebec.....	11.3	66.7	97	-34	May 11	Oct. 5	41.67	119.8	158
Sept Iles.....	7.1	59.6	90	-46	June 1	Sept. 10	42.39	164.3	142
Sherbrooke.....	15.2	68.2	98	-42	May 18	Sept. 23	39.15	95.0	174
Ontario—									
Northern—									
Kapuskasing.....	-0.1	63.2	101	-53	June 14	Sept. 5	33.78	123.1	184
Port Arthur—									
Port William.....	7.2	63.5	104	-42	June 4	Sept. 7	29.40	84.6	144

¹ Total rainfall and one tenth of the total snowfall.

Temperature and Precipitation Data for Typical Stations in the Various Districts—concluded

District and Station	TEMPERATURES (Fahrenheit)						PRECIPITATION		
	Mean Jan.	Mean July	Highest on Record	Lowest on Record	Av. Dates of Freezing Temperatures (32°F or Lower)		Total (All Forms) ¹	Snowfall	Av. Number of Days (All Forms)
					Last in Spring	First in Autumn			
Ontario—concluded							in.	in.	
Sioux Lookout.....	-0.4	65.7	103	-51	May 29	Sept. 19	27.59	85.5	167
Trout Lake.....	-11.0	60.7	96	-54	June 16	Sept. 15	23.89	77.0	157
Southern—									
London.....	22.9	69.6	106	-27	May 11	Oct. 9	37.19	72.5	164
Ottawa.....	12.6	69.2	102	-38	May 11	Sept. 29	33.55	86.1	152
Parry Sound.....	16.3	67.5	100	-39	May 15	Oct. 2	39.12	111.7	159
Toronto.....	25.0	71.5	105	-27	May 3	Oct. 15	30.56	54.9	137
Windsor.....	25.5	71.8	101	-15	Apr. 29	Oct. 15	32.61	38.0	137
Prairie Provinces—									
Manitoba—									
Churchill.....	-17.5	53.6	96	-57	June 24	Sept. 11	15.99	69.1	143
The Pas.....	-7.0	64.8	100	-54	May 30	Sept. 21	17.76	54.7	127
Winnipeg.....	0.1	68.3	108	-54	May 29	Sept. 18	20.35	51.3	125
Saskatchewan—									
Regina.....	1.6	66.7	111	-56	May 30	Sept. 15	15.53	43.0	115
Saskatoon.....	1.0	66.6	104	-55	May 27	Sept. 1	13.86	43.2	104
Swift Current.....	8.9	66.9	107	-54	May 30	Sept. 22	15.27	44.4	114
Alberta—									
Beaverlodge.....	7.4	60.2	98	-54	May 30	Sept. 1	17.91	68.1	127
Calgary.....	14.2	62.0	97	-49	May 23	Sept. 15	17.44	58.5	116
Edmonton.....	6.6	63.1	99	-57	May 24	Sept. 16	18.64	53.8	121
Medicine Hat.....	12.1	69.1	108	-51	May 16	Sept. 20	14.29	48.7	93
British Columbia—									
Pacific Coast and Coastal Valleys—									
Estevan Point.....	40.4	56.6	84	7	Apr. 3	Nov. 12	115.39	10.7	201
Langara.....	37.1	54.4	78	6	Apr. 2	Dec. 2	66.39	24.3	252
Prince Rupert.....	35.2	56.2	90	-6	Apr. 19	Nov. 3	94.41	32.7	230
Vancouver.....	37.2	63.8	92	0	Apr. 4	Oct. 27	41.12	17.8	159
Victoria.....	39.4	60.1	95	6	Feb. 28	Dec. 7	27.41	11.5	143
Southern Interior—									
Glacier.....	13.5	57.9	98	-32	June 10	Sept. 8	57.10	370.2	192
Kamloops.....	21.4	69.6	103	-32	May 1	Sept. 26	9.71	32.5	87
Penticton.....	27.4	68.4	105	-16	May 9	Sept. 28	12.08	25.5	101
Princeton.....	17.9	63.4	107	-49	June 5	Sept. 13	14.17	58.5	117
Central Interior—									
Barkerville.....	15.4	54.4	96	-52	June 25	Aug. 16	45.25	226.1	185
McBride.....	16.0	60.5	100	-50	June 18	Aug. 23	21.31	84.3	127
Prince George.....	11.6	58.9	94	-58	June 15	Aug. 26	24.67	79.6	162
Smithers.....	14.9	57.5	93	-47	June 22	Aug. 11	20.27	73.3	157
Northern Interior—									
Atlin.....	8.6	53.5	87	-54	June 11	Sept. 4	10.95	43.4	70
Dease Lake.....	-2.3	55.1	93	-60	July 2	Aug. 16	15.25	65.8	144
Fort Nelson.....	-8.4	62.2	98	-61	May 24	Sept. 2	17.13	67.7	125
Fort St. John.....	4.2	61.1	92	-53	May 19	Sept. 5	17.42	76.0	131
Smith River.....	-11.4	57.3	92	-74	July 2	Aug. 11	18.28	79.9	147
Yukon Territory—									
Dawson.....	-17.6	59.8	95	-73	June 4	Aug. 21	12.67	49.9	115
Snag.....	-18.5	57.0	89	-81	June 17	Aug. 7	14.07	53.2	114
Watson Lake.....	-11.5	59.1	93	-74	June 1	Aug. 25	16.98	82.5	149
Whitehorse.....	-0.6	57.5	91	-62	June 10	Aug. 27	10.05	45.6	116
Northwest Territories—									
Mackenzie Basin—									
Fort Good Hope.....	-22.0	60.5	95	-69	June 14	Aug. 6	10.52	46.3	97
Fort Simpson.....	-15.8	62.0	97	-69	June 4	Aug. 28	12.92	47.9	118
Hay River.....	-12.2	59.8	96	-62	June 11	Sept. 7	12.50	53.3	99
Barrens—									
Baker Lake.....	-27.2	51.3	82	-58	July 2	Aug. 24	8.21	22.9	95
Chesterfield.....	-24.8	47.9	86	-60	June 30	Sept. 4	10.96	46.5	98
Coppermine.....	-19.4	48.7	90	-58	June 28	Aug. 18	9.22	44.3	114
Arctic Archipelago—									
Clyde.....	-16.6	40.6	71	-50	July 13	July 17	8.07	57.5	87
Eureka.....	-34.0	42.4	67	-63	June 25	Aug. 10	2.40	14.0	48
Frobisher Bay.....	-15.7	46.2	76	-49	July 2	Aug. 22	14.99	80.5	129
Mould Bay.....	-28.4	38.8	60	-63	July 15	July 18	3.17	18.7	74
Resolute.....	-26.3	40.3	65	-61	July 9	July 25	5.36	28.8	95

¹ Total rainfall and one tenth of the total snowfall.

Section 2.—Meteorological Observing Stations

In January 1968, official meteorological observations were taken and recorded at 2,392 weather reporting stations in Canada. There are several different classes of stations ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative observing stations where a volunteer observer makes daily observations of rainfall, snowfall and temperature or precipitation only. While there are vast areas of the country where the weather stations are several hundred miles apart, most of the settled parts of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

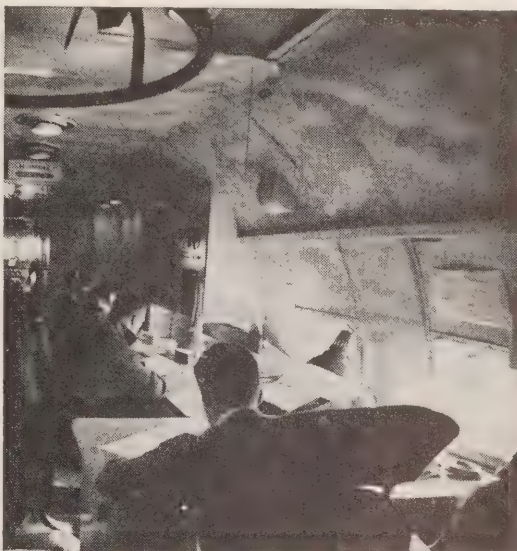
At most of the 283 first-order synoptic stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts are made every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and then at each month-end the manuscript reports are sent by mail to Meteorological Branch Headquarters for use in compiling climatic statistics. At 99 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 24 stations are operated in a similar manner by the different Armed Services; 93 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, or by co-operative arrangement with various transportation and communications companies.

Twice daily, at 34 locations throughout the country, complete upper air observations are made from the surface to altitudes upwards to 100,000 feet. Pressure, temperature and humidity measurements are determined by radiosonde instruments carried aloft by balloons and the information reported by radio to the ground receiving stations; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 30 locations where the winds in the lower layers of the atmosphere are determined by observing free balloon drift by means of a theodolite or by radar. As in the case of the first-order synoptic reporting stations, these upper air weather observations are made available immediately to forecast offices for weather forecasting purposes, and the manuscript reports are collected at Meteorological Branch Headquarters for compilation of climatic statistics.

There are 1,493 weather observing stations in Canada classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of the observers serve on a voluntary basis and willingly spend several hours a month on their hobby. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

There are 501 stations classified as precipitation stations where rainfall and snowfall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are 114 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the number of weather stations in Canada has been growing at an average rate of more than 100 a year for the past decade and thus a steadily increasing climatic intelligence is assisting Canadians in all economic pursuits.

Trained observers from the Meteorological Branch of the Department of Transport, flying high in specially equipped long-range aircraft, plot the extent and density of winter ice over Canada's eastern coastal waters. Deepsea merchantmen and large and small fishing craft benefit from the continuing and precise recording of ever-changing ice conditions, the study of which leads to increased periods of winter navigation in greater safety.



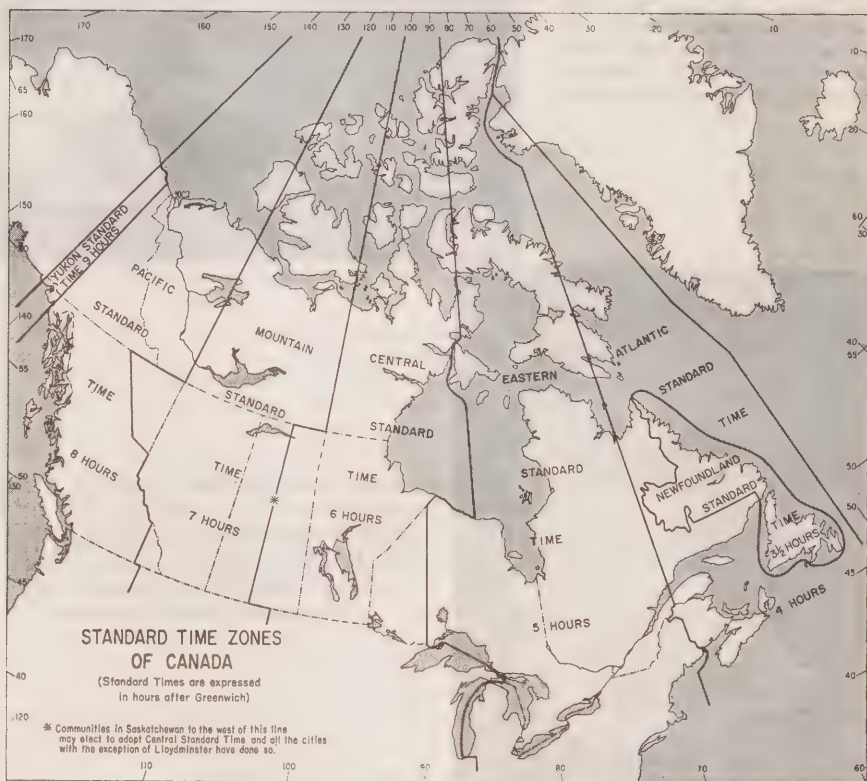
Plotting is done by visual observation through bubble windows in clear weather and by means of radar and closed-circuit electronic camera during periods of poor visibility. Navigational directives are immediately circulated to shipping and data recorded for the continuing study of problems associated with icy seas.

Section 3.—Standard Time and Time Zones

Standard Time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24, each zone ideally extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international date-line runs roughly north-south through the mid-Pacific.

Canada has seven time zones, the most easterly being Newfoundland Standard Time, three hours and thirty minutes behind UT, and the most westerly Yukon Standard Time, nine hours behind UT. In between, from east to west, the remaining zones are called Atlantic, Eastern, Central, Mountain and Pacific.

Legal Authority for the Time Zones.—Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and the Northwest Territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by



amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the Dominion Observatory time was declared the time to be used for official purposes in Canada.

Daylight Saving Time.—Although Daylight Saving Time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of Daylight Saving. In the remaining provinces it is necessary to refer to the individual municipalities to determine whether, and between what dates, Daylight Saving is adopted in any particular year.

CHAPTER II.—CONSTITUTION AND GOVERNMENT*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

PART I.—CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning one hundred years ago in the enactment (Mar. 29, 1867) by the British Parliament of the British North America Act, 1867. Fashioned largely out of the Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, the British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada".

* Except where otherwise indicated, the data in this Chapter have been brought up to the date of Dec. 31, 1968. For reasons given on p. 108, the short sketches of departments, boards, commissions, etc., and of Crown corporations, normally appearing in Sections 2 and 3 of Part III, are carried in this edition in the Appendix, together with any other important changes that may occur between Dec. 31, 1968 and the date of going to press of the volume.

Although the new nation that came into being on July 1, 1867 was a federation comprised of four provinces (namely, Ontario, Quebec, New Brunswick and Nova Scotia) Sect. 146 of the Act provided for the admission into the Union of the Crown colonies of Prince Edward Island and Newfoundland on the Atlantic and the united (1866) island and mainland colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Bay Company territory in the North West known as "Rupert's Land and the North-Western Territory". Following the negotiation of an agreement on terms comprising the Company's surrender of its authority and territories to the Crown (which was to transfer them at once to Canada) and the retention of one twentieth of the land of the fertile belt (the southern territories) with designated blocks of land around its trading posts and a Canadian cash payment of £300,000, the new nation of Canada was ready to expand westward with considerable momentum across the Continent to the Pacific.

The acquisition by Canada of Rupert's Land and the North-Western Territory enabled the Red River settlement, after a few months of disturbance, to receive limited provincial establishment under the name of "Manitoba" in 1870; provided the Federal Government with the public lands needed to help subsidize a transcontinental railway linking the Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to begin the Canadian Pacific Railway within two years and to complete it within ten years of the date of union, July 20, 1871; and laid, through the provision of millions of acres of public lands, the land and economic bases for the Federal Government's adoption of a free-homestead policy for the Canadian prairies that, in conjunction with the completion of the Canadian Pacific Railway and the launching of other railway lines, brought wave after wave of settlers into the Northwest Territories in such numbers as to justify the creation of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the Northwest Territories south of the 60th parallel of north latitude. Although provision for their entry was included in the British North America Act, 1867, the Province of Prince Edward Island held back from the Union until 1873 and Newfoundland became Canada's tenth province on Mar. 31, 1949.

The Constitution of Canada, which had a corporate beginning in 1867, combines, in a set of rules determining the creation and operation of the machinery or institutions of government, the Cabinet system of responsible government (based on an inheritance from Britain) with a Canadian adaptation of federalism (as then practised in the United States for eighty years). A written document, the British North America Act of 1867, contains a substantial portion of Canada's Constitution and this Act, with its various amendments,* is popularly held to be the Canadian Constitution. There is, however, another and perhaps more important part which appears, through the evolutionary processes of historical growth, in various guises including well-established usages and conventions found in the unwritten provisions of the Constitution.

Thus, the British North America Act is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other British statutes (such as the Statute of Westminster, 1931) and Orders in Council (notably those admitting various provinces and territories to the federation), Statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the Royal Style and Titles, the Governor General, the Senate, the House of Commons, the creation of courts, the establishment of government departments, the franchise, elections, and also statutes of provincial legislatures relating to provincial constitutional institutions and government

* See *A Consolidation of The British North America Acts 1867 to 1965*, consolidated by Elmer A. Driedger as of Jan. 1, 1967. Queen's Printer, Ottawa. 75 cents (Catalogue No. YX1-167).

matters. Federal and provincial Orders in Council, legally authorized by their respective statutes, provide further constitutional material as do the decisions of the courts which interpret the British North America Act and all ordinary statutes and indeed possess the power to set aside any laws which they hold to be *ultra vires* or beyond the jurisdiction of the enacting legislative bodies, whether federal or provincial. Moreover, the Canadian Constitution comprises, in addition to the statutory law and its judicial interpretation, substantial sections of the common law, unwritten constitutional usages and conventions and principles of democratic government which were transplanted from Britain over two hundred years ago and since then have been thriving and evolving in the Canadian environment. For example, the Cabinet system of responsible government (see p. 56) and its functioning through close identification of the executive and the legislative powers (that is, of the Cabinet and the House of Commons) is not mentioned in the British North America Act but derives from an unwritten convention of the Constitution.

Although the essential principles of Cabinet government are based in custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the British North America Act. Apart from the creation of the federal union, the dominant feature of the Act and indeed of the Canadian federation was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest (see p. 64 and p. 79).

Unlike the written constitutions of many nations, the British North America Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (clause 133) and special safeguards with respect to sectarian or denominational schools. Such vital rights as freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the British North America Act but rather depend on the statute law and the common law inheritance. Security of these rights was confirmed by the passage of a Canadian Bill of Rights—An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c. 44), assented to Aug. 10, 1960. (See also Chapter IX, Sect. 1 on Canadian Criminal Law and Procedure.)

Amendment of the Constitution.—No provision was made in the British North America Act of 1867 for amendment thereof by any legislative authority in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of Members of the House of Commons and the Senate, and each provincial legislature was empowered to amend the constitution of the province except as regards the office of Lieutenant-Governor. By an amendment to the British North America Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language, and the duration of the House of Commons other than in time of real or apprehended war, invasion or insurrection.

The question of devising amendment procedure within Canada which satisfies the need to safeguard or entrench such basic provincial and minority rights as are noted immediately above and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances is one that still engages the attention of the federal and provincial governments and legislatures. An outline of the constitutional background to the problem, an annotated list of the fourteen occasions since 1867 when amendments to the British North America Act were made by the United Kingdom Parliament, a concise review of the prolonged search for a satisfactory amending procedure in Canada—the subject of repeated consideration in the Parliament of Canada and in a series of formal federal-provincial conferences and meetings in the years 1927, 1935-36, 1950, 1960-61 and 1964—and, more specifically, the text of a draft Bill “to provide for the amendment in Canada of the Constitution of Canada” (accompanied by explanatory notes relating thereto) which embodies the amending procedure or formula unanimously recommended by the Conference of Attorneys-General and unanimously accepted by the Conference of the Prime Minister and the Premiers (October 1964) are all made available in an official publication entitled *The Amendment of the Constitution of Canada*, authorized by the Minister of Justice, February 1965.*

Treaty-Making Powers.†—The Federal Government has exclusive responsibility for the conduct of external affairs as a matter of national policy affecting all Canadians. The policy of the Federal Government in discharging this responsibility is to seek to promote the interest of the entire country and of all Canadians of the various provinces within the over-all framework of the national policy.

In respect of matters of specific concern to the provinces of Canada, it is the policy of the Canadian Government, in a spirit of co-operative federalism, to do its utmost to assist the provinces in achieving the particular aspirations and goals that they wish to attain. The attitude of the Federal Government in this respect was illustrated by the “entente” signed by representatives of Quebec and France in the field of education in February 1965. The Quebec and federal authorities co-operated actively in a procedure that enabled the Province of Quebec, within the framework of the Constitution and the national policy, to participate in international arrangements in a field of particular interest to that province.

Thus, under existing procedures, the position is that, once it is determined that what a province wishes to achieve through agreements in the field of education or in other fields of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss detailed arrangements directly with the competent authorities of the country concerned. When a formal international agreement is to be concluded, however, the federal powers relating to the signature of treaties and the conduct of over-all foreign policy must necessarily come into operation.

The approach of the Canadian Government to the question of Canadian representation in international organizations of a social, cultural or humanitarian character reflects the same constructive spirit. It recognizes the desirability of ensuring that the Canadian representation in such organizations and conferences reflects in a fair and balanced way provincial and other interests in these subjects.

* Available from the Queen's Printer, Ottawa. \$2 (Cat. No. J2-1665).

† Extracted from “The Provinces and Treaty-Making Powers”, Appendix to *Votes and Proceedings of the House of Commons of Canada*, No. 8. Apr. 26, 1965.

1.—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
Ontario ¹	July 1, 1867	Act of Imperial Parliament—The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
Quebec ²	July 1, 1867		594,860	Quebec
Nova Scotia.....	July 1, 1867		21,425	Halifax
New Brunswick.....	July 1, 1867		28,354	Fredericton
Manitoba ³	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
British Columbia.....	July 20, 1871	Imperial Order in Council, May 16, 1871..	366,255	Victoria
Prince Edward Island....	July 1, 1873	Imperial Order in Council, June 26, 1873..	2,184	Charlotte- town
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)..	251,700	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3).....	255,285	Edmonton
Newfoundland	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22).....	156,185	St. John's
Northwest Territories ⁵ ...	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870.....	1,304,903	Yellowknife
Mackenzie ⁶	Jan. 1, 1920	Order in Council, Mar. 16, 1918.....	527,490	
Keewatin ⁶	Jan. 1, 1920		228,160	
Franklin ⁶	Jan. 1, 1920		549,253	
Yukon Territory ⁷	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
Canada.....			3,851,809	

¹ The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

² Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

³ Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴ Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵ By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3, and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

⁶ By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷ The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and, by the Yukon Territory Act (SC 1898, c. 6), was declared to be a separate Territory.

PART II.—MACHINERY OF GOVERNMENT

Section 1.—The Federal Government

Canadian governmental machinery or institutions function through the application of the British North America Act and its amendments and those other constitutional principles and developments—both “written” and “unwritten”—that have evolved from the combination of British law and traditions with Quebec’s adherence to the French language and habits of mind, all within a New World transcontinental environment. They are classified into three branches—the Executive, the Legislature and the Judiciary—and exist for each of the three levels of government in Canada—federal, provincial and local—functioning within their respective jurisdictions as specified respectively by the provisions of the British North America Act and by their statutes of origin.

Despite this *division* of the Government of Canada into three separate branches, Canada’s system of responsible government was long ago evolved from the British practice of the *union* of the executive and legislative branches which is the antithesis of the United States system embodying the opposing principle of the *division* or *separation* of executive, legislative and judicial powers or authorities from one another. As recounted under the heading of The Cabinet (pp. 58-59), there is a close identification of the Canadian legislative and executive branches of government, with final direction and authority emanating from the former. The Prime Minister and his Cabinet, which formulates and carries out all executive policy, have seats in Parliament and are responsible at all times to the House of Commons and it is here that the *principle of the union* of powers finds its significant expression. On the other hand, the guarantee of the independence of the judiciary, whose superior court judges are appointed by the Governor General (in actual fact by the Prime Minister), is ensured in the constitutional provision that they shall hold office during good behaviour and can be removed by the Governor General only after a joint address of both Houses of Parliament; in this guarantee is found a limited acceptance of the principle of separation of powers, for judges cannot be removed because their decisions happen to be disliked by the Cabinet, by Parliament, or by the people; they can conscientiously perform their judicial functions without fear or intimidation.

In addition to the political institutions embraced by the executive and legislative branches, the machinery of the government at the federal level includes the non-political public service consisting of employees of the state organized in about 25 departments of government, some two dozen special boards and commissions, and about 45 Crown corporations or other agencies engaged in administering various public services under their respective statutes and ultimately accountable, through a Minister, to Parliament. Part III of this Chapter recounts briefly the administrative functions of the Federal Government under four Sections, the first three describing the financial administration of the Government of Canada, the functions of each department, board, commission, and of each Crown corporation (whether classified as departmental, agency or proprietary under the Financial Administration Act) and the fourth listing the principal Acts of Parliament grouped according to the department charged with the administration thereof.

Current government organization and the delineation of the respective policies and administrative functions of the Ministers and their Departments are outlined in the Appendix to this volume and presented visually in the accompanying government organization chart.

Subsection 1.—The Executive

The Crown.—The British North America Act of 1867 (Sect. 9) provides that “the Executive Government and authority of and over Canada is . . . vested in the Queen”. The functions of the Crown, which are substantially the same as those of The Queen in



The Rt. Hon. Roland Michener, Governor General of Canada, reading the Speech from the Throne at the opening of the Twenty-eighth Parliament on Sept. 12, 1968. The Prime Minister, the Rt. Hon. Pierre Elliott Trudeau, sits on his right and Mrs. Michener on his left, and directly in front of him sit the Judges of the Supreme Court of Canada. Senators and guests occupy the Chamber and Members of the House of Commons are called to the Bar just inside the entrance.

*Photo by
Malak, Ottawa*

relation to the British Government, are discharged in Canada by the Governor General in accordance with established principles of responsible government.

The Queen.—The personal participation of The Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, The Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, The Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of the The Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position, and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 28, 1953. The title of The Queen, as far as Canada is concerned, now is:—

Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith.

1.—Sovereigns of Canada since Confederation, 1867

Name	Dynasty	Year of Birth	Date of Accession
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha.....	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

The Governor General.—The Governor General, appointed by The Queen as her personal representative in Canada on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of The Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North America Acts, 1867 to 1964. Acting under the recommendations of his responsible Ministers, in The Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are \$48,666 and \$72,000, respectively. Office expenses and certain other items of expenditure are provided for in the estimates for the Office of the Secretary to the Governor General.

The present Governor General is styled His Excellency The Right Honourable Roland Michener, C.C., C.D.

2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
THE VISCOUNT MONCK OF BALLYTRAMMON.....	June 1, 1867	July 1, 1867
THE BARON LISGAR OF LISGAR AND BAILIEBOROUGH.....	Dec. 29, 1868	Feb. 2, 1869
THE EARL OF DUFFERIN.....	May 22, 1872	June 25, 1872
THE MARQUIS OF LORNE.....	Oct. 5, 1878	Nov. 25, 1878
THE MARQUIS OF LANSDOWNE.....	Aug. 18, 1883	Oct. 23, 1883
THE BARON STANLEY OF PRESTON.....	May 1, 1888	June 11, 1888
THE EARL OF ABERDEEN.....	May 22, 1893	Sept. 18, 1893
THE EARL OF MINTO.....	July 30, 1898	Nov. 12, 1898
THE EARL GREY.....	Sept. 26, 1904	Dec. 10, 1904
FIELD MARSHAL H. R. H. THE DUKE OF CONNAUGHT.....	Mar. 21, 1911	Oct. 13, 1911
THE DUKE OF DEVONSHIRE.....	Aug. 19, 1916	Nov. 11, 1916
GENERAL THE BARON BYNG OF VIMY.....	Aug. 2, 1921	Aug. 11, 1921
THE VISCOUNT WILLINGTON OF RATTON.....	Aug. 5, 1926	Oct. 2, 1926
THE EARL OF BESSBOROUGH.....	Feb. 9, 1931	Apr. 4, 1931
THE BARON TWEEDSMUIR OF ELSFIELD.....	Aug. 10, 1935	Nov. 2, 1935
MAJOR GENERAL THE EARL OF ATHLONE.....	Apr. 3, 1940	June 21, 1940
FIELD MARSHAL THE VISCOUNT ALEXANDER OF TUNIS.....	Mar. 21, 1946	Apr. 12, 1946
THE RIGHT HONOURABLE VINCENT MASSEY.....	Jan. 24, 1952	Feb. 28, 1952
GENERAL THE RIGHT HONOURABLE GEORGES P. VANIER.....	Aug. 1, 1959	Sept. 15, 1959
THE RIGHT HONOURABLE ROLAND MICHENER.....	Mar. 29, 1967	Apr. 17, 1967

The Cabinet.—The Cabinet is a committee of Ministers chosen by the Prime Minister (the leader of the political party forming the Government of the Day) generally from Members of Parliament. By convention, all members of the Cabinet either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of government are generally Members of the House of Commons although there is nothing in the Constitution to prevent a Minister with Portfolio being a Senator.* However, they generally prefer to have seats in the House of Commons where all crucial legislation, by convention, is introduced and where they can offer explanations necessary to secure passage of their Estimates or legislation with which they are deeply concerned. Ministers without Portfolio (without a department to administer) can be members of either the House of Commons or the Senate. Frequently the Cabinet contains one Minister without Portfolio—usually the Leader of the Government in the Senate—and perhaps one or two others chosen for a variety of reasons such as the desirability of including certain provincial or sectional representation that might otherwise be lacking in the Ministry.

Cabinet members are selected by the Prime Minister in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department.

* Senator the Hon. Gideon Decker Robertson held the portfolio of Minister of Labour for the periods Nov. 7, 1918 to Dec. 29, 1921 and Aug. 7, 1930 to Feb. 2, 1932; Senator the Hon. Malcolm Wallace McCutcheon served as Minister of Trade and Commerce from Feb. 12 to Apr. 22, 1963.

The position of Prime Minister, the keystone of the Cabinet, is one of exceptional authority. He alone makes recommendations on the dissolution and convocation of Parliament, appointment of Privy Councillors, Cabinet Ministers, Lieutenant-Governors, Chief Justices, Senators, Speakers of the Senate and House of Commons, and Deputy Heads of departments. The Cabinet, under his leadership, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When the Cabinet (the Government) loses the confidence of the House, it must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has lost the confidence of the House is granted a dissolution and is defeated in the ensuing general election, then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also exist as a result of a general election held subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor General in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

The Prime Ministers since Confederation are listed in Table 3 and the members of the Ministry as at Dec. 31, 1968 in Table 4. Sessional and other allowances received by Cabinet Ministers are given at p. 73.

3.—Prime Ministers since Confederation, 1867

Ministry	Name	Length of Administration
1	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	July 1, 1867 — Nov. 5, 1873
2	Hon. ALEXANDER MACKENZIE.....	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir JOHN JOSEPH CALDWELL ABBOTT.....	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir JOHN SPARROW DAVID THOMPSON.....	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir MACKENZIE BOWELL.....	Dec. 21, 1894 — Apr. 27, 1896
7	Rt. Hon. Sir CHARLES TUPPER.....	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir WILFRID LAURIER.....	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. ARTHUR MEIGHEN.....	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. ARTHUR MEIGHEN.....	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. RICHARD BEDFORD BENNETT.....	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. JOHN GEORGE DIFENBAKER.....	June 21, 1957 — Apr. 22, 1963
19	Rt. Hon. LESTER BOWLES PEARSON.....	Apr. 22, 1963 — Apr. 20, 1968
20	Rt. Hon. PIERRE ELLIOTT TRUDEAU.....	Apr. 20, 1968 — ...

4.—Members of the Twentieth Ministry, as at Dec. 31, 1963¹

(According to precedence of Ministers)

NOTE.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of First Appointment	Date of Appointment to Present Portfolio
Prime Minister	Rt. Hon. PIERRE ELLIOTT TRUDEAU..	Apr. 4, 1967	Apr. 20, 1968
Leader of the Government in the Senate...	Hon. PAUL JOSEPH JAMES MARTIN....	Apr. 22, 1963	Apr. 22, 1968
Minister of Transport	Hon. PAUL THEODORE HELLYER.....	Apr. 22, 1963	Sept. 19, 1967
Secretary of State for External Affairs.....	Hon. MITCHELL SHARP.....	Apr. 22, 1963	Apr. 22, 1968
Solicitor General of Canada.....	Hon. GEORGE JAMES MCILRAITH.....	Apr. 22, 1963	July 5, 1968
Minister of Public Works.....	Hon. ARTHUR LAING.....	Apr. 22, 1963	July 5, 1968
Minister of Manpower and Immigration....	Hon. ALLAN JOSEPH MACEachen	Apr. 22, 1963	July 5, 1968
President of the Treasury Board.....	Hon. CHARLES MILLS DRURY.....	Apr. 22, 1963	July 5, 1968
Minister of Finance and Receiver General.	Hon. EDGAR JOHN BENSON.....	June 29, 1964	Apr. 22, 1968
Minister of National Defence.....	Hon. LÉO ALPHONSE JOSEPH CADIEUX..	Feb. 15, 1965	Apr. 22, 1968
Minister of Industry and Minister of Trade and Commerce.....	Hon. JEAN-LUC PEPIN.....	Dec. 17, 1965	July 5, 1968
Minister of Forestry and Rural Development.....	Hon. JEAN MARCHAND.....	Dec. 17, 1965	July 5, 1968
Minister of Energy, Mines and Resources..	Hon. JOHN JAMES GREENE.....	Dec. 17, 1965	July 5, 1968
Minister of National Revenue.....	Hon. JOSEPH JULIEN JEAN-PIERRE Côté.....	Dec. 17, 1965	July 5, 1968
Minister of Justice and Attorney General of Canada.....	Hon. JOHN NAPIER TURNER.....	Dec. 17, 1965	July 5, 1968
Minister of Indian Affairs and Northern Development	Hon. JEAN CHRÉTIEN.....	Apr. 4, 1967	July 5, 1968
Minister of Labour.....	Hon. BRYCE STUART MACKASEY.....	Feb. 9, 1968	July 5, 1968
President of the Queen's Privy Council for Canada	Hon. DONALD STOVEL MACDONALD....	Apr. 22, 1968	July 5, 1968
Minister of National Health and Welfare..	Hon. JOHN CARR MUNRO.....	Apr. 22, 1968	July 5, 1968
Secretary of State of Canada.....	Hon. GÉRARD PELLETIER.....	Apr. 22, 1968	July 5, 1968
Minister of Fisheries.....	Hon. JACK DAVIS.....	Apr. 26, 1968	July 5, 1968
Minister of Agriculture.....	Hon. HORACE ANDREW OLSON.....	July 5, 1968	July 5, 1968
Minister of Veterans Affairs.....	Hon. JEAN-EUDES DUBÉ.....	July 5, 1968	July 5, 1968
Minister of Consumer and Corporate Affairs	Hon. STANLEY RONALD BASFORD.....	July 5, 1968	July 5, 1968
Minister of Defence Production.....	Hon. DONALD CAMPBELL JAMIESON....	July 5, 1968	July 5, 1968
Postmaster General.....	Hon. ERIC WILLIAM KIERANS.....	July 5, 1968	July 5, 1968
Minister without Portfolio.....	Hon. ROBERT KNIGHT ANDRAS.....	July 5, 1968	July 5, 1968
Minister without Portfolio.....	Hon. JAMES ARMSTRONG RICHARDSON..	July 5, 1968	July 5, 1968
Minister without Portfolio.....	Hon. OTTO EMIL LANG.....	July 5, 1968	July 5, 1968

¹ Any change occurring between Dec. 31, 1968 and the date of going to press will be carried in an Appendix to this volume.

Parliamentary Secretaries.—The Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, provides for the appointment of 16 Parliamentary Secretaries from among the Members of the House of Commons to assist the respective Ministers in such manner as each Minister may direct. The Government thus revived the system of parliamentary assistantships in practice during the World War II and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising Members of the House might secure a degree of apprenticeship for higher public office. Parliamentary Secretaries hold office for 12 months.

At Dec. 31, 1968, the following Parliamentary Secretaries were in office:—

<u>Secretary</u>	<u>Minister</u>
JAMES WALKER.....	Prime Minister
JEAN-PIERRE Goyer.....	Secretary of State for External Affairs
PAUL LANGLOIS.....	Public Works
GÉRARD LOISELLE.....	Manpower and Immigration
HERBERT E. GRAY.....	Finance
DAVID GROOS.....	National Defence
EUGENE F. WHELAN.....	Fisheries
ROBERT J. ORANGE.....	Energy, Mines and Resources
JEAN CHARLES CANTIN.....	Justice
JAMES McNULTY.....	Labour
YVES FOREST.....	President of the Privy Council
ROSAIRE GENDRON.....	National Health and Welfare
ROBERT D. G. STANBURY.....	Secretary of State of Canada
FLORIAN CÔTÉ.....	Agriculture
STANLEY HADASZ.....	Consumer and Corporate Affairs
RUSSELL HONEY.....	Forestry and Rural Development

The Privy Council.—The British North America Act of 1867 (Sect. 11) provides for "a Council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada...". At Dec. 31, 1968 it consisted of 135 members sworn of the Council by the Governor General on the advice of the Prime Minister. Membership in the Privy Council is for life so that Privy Councillors include both former and present Ministers of the Crown as well as a number of persons who have been, from time to time as an honour, sworn as Privy Councillors; these include members of the Royal Family, past and present Commonwealth Prime Ministers, and former Speakers of the Senate and of the House of Commons of Canada. The Council seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a Committee; the membership thereof, with a few historical exceptions, is identical to that of the Cabinet of the Day. A clear distinction between the functions of the Committee of the Privy Council and the Cabinet is rarely made and actually the terms "Council" and "Cabinet" are commonly employed as synonyms.

5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Dec. 31, 1968

President of the Privy Council..... Hon. DONALD STOVEL MACDONALD
 Clerk of the Privy Council and Secretary to the Cabinet..... R. G. ROBERTSON

NOTE.—In this list the prefix "Rt. Hon." indicates membership in the British Privy Council, or is in accordance with the Table of Titles.

Member ¹	Date When Sworn In	Member ¹	Date When Sworn In
Hon. THOMAS ALEXANDER CRERAR.....	Oct. 12, 1917	Hon. LESLIE MISCAMPBELL FROST.....	Dec. 28, 1961
Hon. HENRY HERBERT STEVENS.....	Sept. 21, 1921	Hon. JACQUES FLYNN.....	Dec. 28, 1961
Hon. EDWARD JAMES MCMURRAY.....	Nov. 14, 1923	Hon. JOHN BRACKEN.....	May 4, 1962
H.R.H. THE DUKE OF WINDSOR.....	Aug. 2, 1927	Hon. PAUL MARTINEAU.....	Aug. 9, 1962
Hon. DONALD MATHESON SUTHERLAND.....	Aug. 7, 1930	Hon. RICHARD ALBERT BELL.....	Aug. 9, 1962
Hon. THOMAS GEROW MURPHY.....	Aug. 7, 1930	Hon. MALCOLM WALLACE MCCUTCHEN.....	Aug. 9, 1962
Hon. WILLIAM EARL ROWE.....	Aug. 30, 1935	Rt. Hon. ROLAND MICHENER.....	Oct. 15, 1962
Hon. COLIN WILLIAM GEORGE GIBSON.....	July 8, 1940	Hon. MARCEL LAMBERT.....	Feb. 12, 1963
Hon. JOSEPH THORARINN THORSON.....	June 11, 1941	Hon. THÉOGÈNE RICARD.....	Mar. 18, 1963
Hon. WILLIAM FERDINAND ALPHONSE TURGEON.....	Oct. 8, 1941	Hon. FRANK CHARLES MCGEE.....	Mar. 18, 1963
Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Dec. 10, 1941	Hon. MARTIAL ASSELIN.....	Mar. 18, 1963
Hon. JOSEPH ARTHUR JEAN.....	Apr. 18, 1945	Hon. WALTER LOCKHART GORDON.....	Apr. 22, 1963
Hon. LIONEL CHEVRIER.....	Apr. 18, 1945	Hon. MITCHELL SHARP.....	Apr. 22, 1963
Hon. PAUL JOSEPH JAMES MARTIN ²	Apr. 18, 1945	Hon. AZELLUS DENIS.....	Apr. 22, 1963
Hon. DOUGLAS CHARLES ABBOTT.....	Apr. 18, 1945	Hon. GEORGE JAMES MCLRAITH ²	Apr. 22, 1963
Hon. THOMAS VIEN.....	July 19, 1945	Hon. WILLIAM MOORE BENEDICKSON.....	Apr. 22, 1963
Hon. MILTON FOWLER GREGG.....	Sept. 2, 1947	Hon. ARTHUR LAING ²	Apr. 22, 1963
Hon. ROBERT WELLINGTON MAYHEW.....	June 11, 1948	Hon. MAURICE LAMONTAGNE.....	Apr. 22, 1963
Rt. Hon. LESTER BOWLES PEARSON.....	Sept. 10, 1948	Hon. LUCIEN CARDIN.....	Apr. 22, 1963
Hon. STUART SINCLAIR GARSON.....	Nov. 15, 1948	Hon. ALLAN JOSEPH MAC'EACHEN ²	Apr. 22, 1963
Hon. ROBERT HENRY WINTERS.....	Nov. 15, 1948	Hon. JEAN-PAUL DESCHATELETS.....	Apr. 22, 1963
Hon. HUGUES LAPOINTE.....	Aug. 25, 1949	Hon. HÉDARD RORICHAUD.....	Apr. 22, 1963
Hon. GABRIEL EDOUARD RINFRET.....	Aug. 25, 1949	Hon. J. WATSON MACNAUGHT.....	Apr. 22, 1963
Hon. WALTER EDWARD HARRIS.....	Jan. 18, 1950	Hon. ROGER TELLETT.....	Apr. 22, 1963
Hon. GEORGE PRUDHAM.....	Dec. 13, 1950	Hon. JUDY V. LAMARSH.....	Apr. 22, 1963
EARL ALEXANDER OF TUNIS.....	Jan. 29, 1952	Hon. CHARLES MILLS DRURY ²	Apr. 22, 1963
Hon. JAMES SINCLAIR.....	Oct. 15, 1952	Hon. JOHN ROBERT NICHOLSON.....	Apr. 22, 1963
Hon. WILLIAM ROSS MACDONALD.....	May 12, 1953	Hon. HARRY HAYS.....	Apr. 22, 1963
Hon. GEORGE ALEXANDER DRW.....	May 12, 1953	Hon. RENÉ TREMBLAY.....	Apr. 22, 1963
Hon. JOHN WHITNEY PICKERSGILL.....	June 12, 1953	Rt. Hon. ROBERT TASCHEREAU.....	Apr. 26, 1963
Hon. JEAN LESAGE.....	Sept. 17, 1953	Hon. JOHN JOSEPH CONNOLLY.....	Feb. 3, 1964
Hon. GEORGE CARLYLE MARLER.....	July 1, 1954	Hon. MAURICE SAUVÉ.....	Feb. 3, 1964
Hon. ROCH PINARD.....	July 1, 1954	Hon. YVON DUPOIS.....	Feb. 3, 1964
Hon. LOUIS RENÉ BRAUDOIN.....	Apr. 15, 1957	Hon. GEORGE STANLEY WHITE.....	June 25, 1964
Hon. PAUL THEODORE HELLYER ²	Apr. 26, 1957	Hon. MAJOR JAMES WILLIAM COLDWELL.....	June 25, 1964
Rt. Hon. JOHN GEORGE DIFENBAKER.....	June 21, 1957	Hon. EDGAR JOHN BENSON ²	June 29, 1964
Hon. HOWARD CHARLES GREEN.....	June 21, 1957	Hon. LÉO ALPHONSE JOSEPH CADIEUX ²	Feb. 15, 1965
Hon. DONALD METHUEN FLEMING.....	June 21, 1957	Hon. LAWRENCE T. PENNELL.....	July 7, 1965
Hon. GEORGE HEES.....	June 21, 1957	Hon. JEAN-LUC PÉPIN ²	July 7, 1965
Hon. LÉON BALCEZ.....	June 21, 1957	Hon. ALAN AYLESWORTH MACNAUGHTON.....	Oct. 25, 1965
Hon. GEORGE RANDOLPH PEARKES.....	June 21, 1957	Hon. JEAN MARCHAND ²	Dec. 18, 1965
Hon. GORDON CHURCHILL.....	June 21, 1957	Hon. JOHN JAMES GREENE ²	Dec. 18, 1965
Hon. EDMUND DAVIE FULTON.....	June 21, 1957	Hon. JOSEPH JULIEN JEAN-PIERRE CÔTÉ ²	Dec. 18, 1965
Hon. DOUGLAS SCOTT HARKNESS.....	June 21, 1957	Hon. JOHN NAPIER TURNER ²	Dec. 18, 1965
Hon. ELLEN LOUKS FAIRCLOUGH.....	June 21, 1957	Hon. MAURICE BOURGET.....	Feb. 22, 1966
Hon. J. ANGUS MACLEAN.....	June 21, 1957	Rt. Hon. PIERRE ELLIOTT TRUDEAU ³	Apr. 4, 1967
Hon. MICHAEL STARR.....	June 21, 1957	Hon. JOSEPH JACQUES JEAN CHRÉTIEN ³	Apr. 4, 1967
Hon. WILLIAM MCLEAN HAMILTON.....	June 21, 1957	Hon. PAULINE VANIER.....	Apr. 11, 1967
Hon. JAMES MAC KERRAS MACDONNELL.....	June 21, 1957	Hon. JOHN PARMENTIER ROBERTS.....	July 5, 1967
Hon. WILLIAM J. BROWNE.....	June 21, 1957	Hon. LOUIS J. ROBICHAUD.....	July 5, 1967
Hon. JAT WALDO MONTEITH.....	Aug. 22, 1957	Hon. DUFFERN ROBLIN.....	July 5, 1967
Hon. FRANCIS ALVIN GEORGE HAMILTON.....	Aug. 22, 1957	Hon. WILLIAM ANDREW CECIL BENNETT.....	July 5, 1967
H.R.H. THE PRINCE PHILIP, Duke of Edinburgh.....	Oct. 14, 1957	Hon. ALEXANDER B. CAMPBELL.....	July 5, 1967
Hon. RAYMOND JOSEPH MICHAEL O'HURLEY.....	May 12, 1958	Hon. WILBERT ROSS THATCHER.....	July 5, 1967
Hon. HENRI COURTEMANCHE.....	May 12, 1958	Hon. ERNEST CHARLES MANNING.....	July 5, 1967
Hon. DAVID JAMES WALKER.....	Aug. 20, 1959	Hon. JOSEPH ROBERT SMALLWOOD.....	July 5, 1967
Hon. JOSEPH PIERRE ALBERT SÉVIGNY.....	Aug. 20, 1959	Hon. ROBERT L. STANFIELD.....	July 7, 1967
Hon. HUGH JOHN FLEMING.....	Oct. 11, 1960	Rt. Hon. JOHN ROBERT CARTWRIGHT.....	Sept. 6, 1967
Hon. NOËL DORION.....	Oct. 11, 1960	Hon. CHARLES RONALD MCKAY GRANGER.....	Sept. 25, 1967
Hon. WALTER DINSDALE.....	Oct. 11, 1960	Hon. BRYCE STUART MACKASEY ²	Feb. 9, 1968
Hon. GEORGE ERNEST HALPENNY.....	Oct. 11, 1960	Hon. DONALD STOVEL MACDONALD ²	Apr. 20, 1968
Hon. WALTER MORLEY ASELTYNE.....	Dec. 28, 1961	Hon. JOHN CARR MUNRO ²	Apr. 20, 1968
		Hon. GÉRARD PELLETIER ²	Apr. 20, 1968

For footnotes, see end of table.

5.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Dec. 31, 1968—concluded

Member ¹	Date When Sworn In	Member ¹	Date When Sworn In
Hon. JACK DAVIS ¹	Apr. 26, 1968	Hon. ERIC WILLIAM KIERANS ²	July 6, 1968
Hon. HORACE ANDREW OLSON ²	July 6, 1968	Hon. ROBERT KNIGHT ANDRAS ²	July 6, 1968
Hon. JEAN-EUDES DUBÉ ²	July 6, 1968	Hon. JAMES ARMSTRONG RICHARDSON ²	July 6, 1968
Hon. STANLEY RONALD BASFORD ²	July 6, 1968	Hon. OTTO EMIL LANG ²	July 6, 1968
Hon. DONALD CAMPBELL JAMIESON ²	July 6, 1968	Hon. SYDNEY JOHN SMITH.....	Oct. 10, 1968

¹ Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in. ² Ranks as a Member of the Cabinet. ³ Ranks as the Prime Minister of Canada.

6.—Duration and Sessions of Parliaments, 1953–68

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; for the 18th and 19th Parliaments in the 1957–58 edition, p. 46; and for the 20th and 21st Parliaments in the 1965 edition, p. 65.

Order of Parliament	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament ^{1,2}
22nd Parliament.....	1st	Nov. 12, 1953	June 26, 1954	227	139	Aug. 10, 1953 ³ Oct. 8, 1953 ⁴ Apr. 12, 1957 ⁵ 3 y., 6 m., 5 d.
	2nd	Jan. 7, 1955	July 28, 1955	203	140	
	3rd	Jan. 10, 1956	Aug. 14, 1956	218	152	
	4th	Nov. 26, 1956	Jan. 8, 1957	44 ⁶	5	
	5th	Jan. 8, 1957	Apr. 12, 1957	95	71	
23rd Parliament.....	1st	Oct. 14, 1957	Feb. 1, 1958	111	78	June 10, 1957 ⁷ Aug. 8, 1957 ⁸ Feb. 1, 1958 ⁹ 5 m., 25 d.
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 ³ Apr. 30, 1958 ⁴ Apr. 19, 1962 ⁵ 3 y., 11 m., 20 d.
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	Sept. 28, 1961	318 ⁷	174	
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament.....	1st	Sept. 27, 1962	Feb. 5, 1963 ⁸	132	72	June 18, 1962 ³ July 18, 1962 ⁴ Feb. 6, 1963 ⁵ 6 m., 20 d.
26th Parliament.....	1st	May 16, 1963	Dec. 21, 1963	220 ⁹	117	Apr. 8, 1963 ³ May 8, 1963 ⁴ Sept. 8, 1965 ⁵ 2 y., 5 m., 1 d.
	2nd	Feb. 18, 1964	Apr. 3, 1965	411 ¹⁰	248	
	3rd	Apr. 5, 1965	Sept. 8, 1965 ¹¹	157 ¹²	53	
27th Parliament.....	1st	Jan. 18, 1966	May 8, 1967	476 ¹³	250	Nov. 8, 1965 ³ Dec. 9, 1965 ⁴ Apr. 23, 1968 ⁵ 2 y., 5 m., 15 d.
	2nd	May 8, 1967	Apr. 23, 1968	352 ¹⁴	155	
28th Parliament.....	1st	Sept. 12, 1968	...	...	...	June 25, 1968 ³ July 25, 1968 ⁴

¹ The ordinary legal limit of duration for each Parliament is five years. ² Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (BNA Act, Sect. 50).

³ Date of general election. ⁴ Writs returnable. ⁵ Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957.

⁶ Includes long adjournment from July 13 to Sept. 7, 1961. ⁷ Government defeated in House of Commons on want of confidence motion. ⁸ Includes long adjournment from Aug. 2 to Sept. 30, 1963. ⁹ Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965.

¹⁰ Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965. ¹¹ House adjourned on June 30 until Sept. 27 but dissolved on Sept. 8, 1965. ¹² Includes long adjournment from June 30 to Sept. 27, superseded by dissolution on Sept. 8, 1965. ¹³ Includes 18-day Christmas adjournment, 11-day Easter adjournment, and two long adjournments totalling 70 days (July 14 to Aug. 29 and Sept. 9 to Oct. 5).

¹⁴ Includes adjournment from July 7, 1967 to Sept. 25, 1967; Christmas adjournment from Dec. 21, 1967 to Jan. 22, 1968; and Easter adjournment from Mar. 27, 1968 to Apr. 23, 1968.

Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of The Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice, most public Bills originate in the House of Commons, although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Bills may be dealt with in the Senate while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVII for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1964, the legislative authority of the Parliament of Canada extends to the following: the amendment of the Constitution of Canada (subject to certain exceptions—see p. 53); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and inland fisheries; ferries between a province and any British or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal jurisdiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (Br. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada may make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions. By the British North America Act, 1964, which received Royal Assent on July 31, 1964, this amendment was extended at the request of the Parliament of Canada (June 19, 1964) to permit the payment of supplementary benefits, including survivors' and disability benefits irrespective of age, under a contributory pension plan.

The Senate.—From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is summarized by province in Table 7.

Senators are appointed by the Governor General by instrument under the Great Seal of Canada. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. Until the passage of "An Act to make provision for the retirement of members of the Senate" (SC 1965, c. 4), assented to on June 2, 1965, Senators were appointed for life; that Act fixes at

75 years the age at which any person appointed to the Senate after the coming into force of the Bill will cease to hold his place in the Senate.

In each of the four main divisions of Canada except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec, one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The Senate is not a competitor of the House of Commons in the field of legislation but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.

7.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915-1948	1940-1967
Ontario.....	24	24	24	24	24	24	24	24	24	24	24
Quebec.....	24	24	24	24	24	24	24	24	24	24	24
Atlantic Provinces.....	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia.....	12	12	12	10	10	10	10	10	10	10	10
New Brunswick.....	12	12	12	10	10	10	10	10	10	10	10
Prince Edward Island.....	...	...	...	4	4	4	4	4	4	4	4
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	6
Western Provinces.....	...	2	5	5	6	8	9	11	15	24	24
Manitoba.....	...	2	2	2	3	3	4	4	4	6	6
British Columbia.....	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan.....	...	...	...	...	...	...	...	...	...	6	6
Alberta.....	...	...	...	...	...	2	2	4	4	6	6
Totals.....	72	74	77	77	78	80	81	83	87	96	102

8.—Members of the Senate, by Province, as at Dec. 31, 1963¹

Speaker.....	HON. JEAN-PAUL DESCHATELETS
Leader of the Government.....	HON. PAUL MARTIN
Leader of the Opposition.....	HON. JACQUES FLYNN
Clerk of the Senate and Clerk of the Parliaments.....	ROBERT FORTIER

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
Newfoundland— (6 Senators)		Nova Scotia— (9 Senators—1 vacancy)	
BASHA, MICHAEL G.....	Curling	KINLEY, JOHN JAMES.....	Lunenburg
HOLLETT, MALCOLM.....	St. John's	ISNOR, GORDON B.....	Halifax
COOK, ERIC.....	St. John's	SMITH, DONALD.....	Liverpool
CARTER, CHESLEY WILLIAM.....	St. John's	CONNOLLY, HAROLD.....	Halifax
DUGGAN, JAMES.....	St. John's	BLOIS, FREDERICK MURRAY.....	Truro
PETTEN, WILLIAM JOHN.....	St. John's	MACDONALD, JOHN MICHAEL.....	North Sydney
Prince Edward Island— (4 Senators)		O'LEARY, CLEMENT AUGUSTINE.....	Antigonish
INMAN, FLORENCE ELSIE.....	Montague	WELCH, FRANK C.....	Wolfville
MACDONALD, JOHN JOSEPH.....	Charlottetown	URQUHART, EARL WALLACE.....	West Bay
PHILLIPS, ORVILLE HOWARD.....	Alberton	New Brunswick— (10 Senators)	
KICKHAM, THOMAS JOSEPH.....	Souris	BURCHILL, GEORGE PERCIVAL.....	South Nelson

¹For footnote, see end of table, p. 66.

8.—Members of the Senate, by Province, as at Dec. 31, 1968¹—concluded

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
New Brunswick—concluded		Ontario—concluded	
FERGUSSON, MURIEL McQUEEN....	Fredericton	WILLIS, HARRY A.....	Toronto
McGRAND, FRED A.....	Fredericton Jct.	O'LEARY, M. GRATTAN.....	Ottawa
SAVOIE, CALIXTE F.....	Moncton	GROSAIT, ALLISTER.....	Ottawa
FOURNIER, EDGAR.....	Iroquois	WALKER, DAVID JAMES.....	Toronto
RATTENBURY, NELSON.....	Saint John	BELISLE, RHÉAL.....	Sudbury
McELMAN, CHARLES ROBERT.....	Fredericton	LANG, DANIEL AIKEN.....	Toronto
McLEAN, DONALD ALLAN.....	Black's Harbour	AIRD, JOHN BLACK.....	Toronto
MICHAUD, HÉRYÉ J.....	Fredericton	BENEDICKSON, WILLIAM MOORE.....	Kenora
ROBICHAUD, HÉDARD.....	Caracquet	DAVEY, DOUGLAS KEITH.....	Toronto
Quebec—		THOMPSON, ANDREW ERNEST.....	Kendal
(23 Senators—1 vacancy)		LAIRD, KEITH.....	Windsor
GOUIN, LÉON MERCIER.....	Montreal	KINNEAR, MARY ELIZABETH.....	Port Colborne
VAILLANCOURT, CYRILLE ²	Lévis	STANBURY, RICHARD JAMES.....	Toronto
DESMUREAULT, JEAN-MARIE.....	Quebec	MARTIN, PAUL.....	Windsor
FOURNIER, SARTE.....	Montreal	Manitoba—	
MOLSON, HARTLAND DE		(6 Senators)	
MONTARVILLE.....	Montreal	BEAUBIEN, ARTHUR L.....	St. Jean Baptiste
LEFRANÇOIS, J. EUGÈNE.....	Montreal	THORVALDSON, GUNNAR S.....	Winnipeg
MÉTHOT, LÉON.....	Trois-Rivières	IRVINE, OLIVE LILLIAN.....	Winnipeg
MONETTE, GUSTAVE.....	Montreal	HAIG, J. CAMPBELL.....	Winnipeg
QUART, JOSIE ALICE DINAN.....	Quebec	YUZYK, PAUL.....	Winnipeg
BEAUBIEN, LOUIS PHILIPPE.....	Montreal	EVERETT, DOUGLAS DONALD.....	Winnipeg
FLYNN, JACQUES.....	Quebec	Saskatchewan—	
BOURGET, MAURICE.....	Lévis	(6 Senators)	
GÉLINAS, LOUIS P.....	Montreal	ASELTINE, WALTER M.....	Rosetown
BOURQUE, ROMUALD.....	Outremont	BOUCHER, WILLIAM ALBERT.....	Prince Albert
DENIS, AZELLUS.....	Montreal	PEARSON, ARTHUR M.....	Lumsden
DESCHATELETS, JEAN-PAUL.....	Montreal	McDONALD, ALEXANDER HAMILTON.....	Regina
MACNAUGHTON, ALAN AYLESWORTH.....	Westmount	ARGUE, HAZEN ROBERT.....	Kayville
LANGLOIS, J. G. LÉOPOLD.....	Quebec	SPARROW, HERBERT ORVILLE.....	North Battleford
DESRUISSEAU, PAUL.....	Sherbrooke	Alberta—	
LAMONTAGNE, MAURICE.....	Montreal	(5 Senators—1 vacancy)	
PHILLIPS, LAZARUS.....	Westmount	CAMERON, DONALD.....	Edmonton
EUBES, RAYMOND.....	Montreal	GLADSTONE, JAMES.....	Cardston
GIGUÈRE, LOUIS DE GONZAGUE.....	Montreal	HASTINGS, EARL ADAM.....	Calgary
Ontario—		HAYS, HARRY WILLIAM.....	Calgary
(23 Senators—1 vacancy)		PROWSE, JAMES HARPER.....	Edmonton
HAYDEN, SALTER ADRIAN.....	Toronto	British Columbia—	
PATERSON, NORMAN McLEOD.....	Fort William	(3 Senators—3 vacancies)	
ROEBUCK, ARTHUR WENTWORTH.....	Toronto	FARRIS, JOHN WALLACE DE B.....	Vancouver
CONNOLLY, JOHN J.....	Ottawa	MACKENZIE, NORMAN ARCHIBALD.....	Vancouver
CROLL, DAVID A.....	Toronto	McRAE ³	Vancouver
LEONARD THOMAS D'ARCY.....	Toronto	NICHOL, JOHN LANG.....	Vancouver
WHITE, GEORGE STANLEY.....	Madoc		
SULLIVAN, JOSEPH A.....	Toronto		
CHUQUETTE, LIONEL.....	Ottawa		

¹ Any change occurring between Dec. 31, 1968 and the date of going to press will be carried in an Appendix to this volume.

² Resigned, effective Jan. 3, 1969.

³ Resigned, effective Jan. 5, 1969.

The House of Commons.—The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be re-adjusted provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basis of the population of all the provinces taken as a whole. The Act was amended accordingly in

1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:—

The membership assigned to each province shall be computed by dividing the total population of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the General Election of 1949.

After the completion of the 1951 Census it was apparent that, as a result of a wartime shift of population, a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended (RSC 1952, c. 304, Sect. 51) (see Canada Year Book 1963-64, p. 75) to ensure that the representation of any province should not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualifications that the effect of the rule should not be to make the representation of a province with a smaller population greater than any province with a larger population.

Subsequently in 1952, Parliament enacted RSC 1952, c. 334, effective in the General Election of 1953 and in each successive General Election down to that of the Twenty-seventh Parliament (Nov. 8, 1965), which provided that representation in the House of Commons should be on the following basis:—

Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sixty-five members.

1965 Redistribution of Representation in The House of Commons.—The Representation Commissioner Act setting up the office and duties of the Representation Commissioner was given Royal Assent on Dec. 21, 1963. The Electoral Boundaries Readjustment Act providing for the establishment of Electoral Boundaries Commissions to report upon and to provide for the readjustment of the representation of the provinces in the House of Commons in accordance with the findings of the 1961 Census of Population was given Royal Assent on Nov. 20, 1964.

Pursuant to Sect. 11 of the Electoral Boundaries Readjustment Act, the Dominion Statistician sent to the Representation Commissioner a certified return showing the population of Canada and of each of the provinces and the population of Canada by electoral districts as ascertained by the 1961 Census. The Representation Commissioner calculated the number of members of the House of Commons to be assigned to each of the provinces subject and according to the provisions of Sect. 51 of the British North America Act, 1867, and the rules provided therein. He then caused a statement to be published in the *Canada Gazette* of Nov. 28, 1964, setting forth the following results:—

Eighty-eight members of the House of Commons shall be elected for the Province of Ontario, seventy-four for the Province of Quebec, eleven for the Province of Nova Scotia, ten for the Province of New Brunswick, thirteen for the Province of Manitoba, twenty-three for the Province of British Columbia, four for the Province of Prince Edward Island, thirteen for the Province of Saskatchewan, nineteen for the Province of Alberta and seven for the Province of Newfoundland.

The Governor General, by proclamation published in the *Canada Gazette*, established an Electoral Boundaries Commission for each province. It was the task of each Commission to prepare, with all reasonable dispatch, a report setting forth its recommendations concerning the division of its particular province into electoral districts and the recommendations concerning the description of the boundaries of each such district and the representation and name to be given thereto. A copy of the 1961 Census return was sent to the chairman of each Commission immediately after its members were appointed.

Pursuant to Sect. 8 of the Representation Commissioner Act, maps were prepared in the office of the Representation Commissioner showing the distribution of population

in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province; these maps were then supplied to the respective Commissions. The Commissions complied with the procedure of the Electoral Boundaries Act and completed their reports within the time prescribed, which was one year. Two certified copies of each report were received by the Representation Commissioner; as required by Sect. 19(1) of that Act, one of these copies was transmitted to the Speaker of the House of Commons, who in turn laid it before the House of Commons.

Then followed a period of thirty days in which objections in writing, signed by no fewer than ten members of the House of Commons, were filed with the Speaker specifying the provisions of the report objected to and the reasons for the objection. A further period of 15 days was set aside in which the House of Commons was to consider the matter of the objections; this period was increased to 45 sitting days by an Act, assented to on Feb. 23, 1966, entitled "An Act to extend the time for consideration of objections pursuant to section 20 of the Electoral Boundaries Readjustment Act with respect to the reports of commissions established for the decennial census taken in the year 1961".

Several objections were filed with the Speaker, the motions were taken up and considered and the reports referred back to the Representation Commissioner by the Speaker and then to the Commissions. On the expiration of a 30-day period for that purpose, the Commissions returned their reports with or without amendment, through the Representation Commissioner to the Speaker. Then a draft representation order was prepared by the Representation Commissioner to be transmitted to the Secretary of State. This order specified the number of members of the House of Commons who shall be elected for each of the provinces as calculated by the Representation Commissioner and, dividing each of the provinces into electoral districts, described the boundaries of each such district and specified the representation and name given thereto, in accordance with the recommendations contained in the reports. The Governor in Council, by proclamation of June 16, 1966, declared the draft representation order to be in force, effective upon the dissolution of the then-existing Parliament.

At the subsequent election, according to the representation order set out in the Schedule to the Proclamation, 88 members of the House of Commons shall be elected for the Province of Ontario, 74 for the Province of Quebec, 11 for the Province of Nova Scotia, 10 for the Province of New Brunswick, 13 for the Province of Manitoba, 23 for the Province of British Columbia, four for the Province of Prince Edward Island, 13 for the Province of Saskatchewan, 19 for the Province of Alberta and seven for the Province of Newfoundland. In addition, one member each will be elected for the Yukon Territory and the Northwest Territories, making a total representation of 264 in the House of Commons.

The number of representatives of each province elected at each of the 28 General Elections since Confederation is given in Table 9.

9.—Representation in the House of Commons, as at Federal General Elections 1867-1968

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968
Ontario.....	82	88	88	92	92	92	86	86	82	82	82	83	85	88
Quebec.....	65	65	65	65	65	65	65	65	65	65	65	73	76	74
Nova Scotia.....	19	21	21	21	21	20	18	16	14	12	13	12	12	11
New Brunswick.....	15	16	16	16	16	14	13	13	11	11	10	10	10	10
Manitoba.....	...	4	5	5	7	10	10	10	15	17	17	16	14	13
British Columbia.....	...	6	6	6	6	6	7	7	13	14	16	18	22	23
Prince Edward Island.....	...	...	6	6	6	5	4	4	4	4	4	4	4	4
Saskatchewan.....	...	...	...	...	4	4	10	10	16	21	21	20	17	13
Alberta.....	...	...	...	...	...	...	10	7	12	16	17	17	17	19
Yukon Territory.....	...	...	...	...	...	...	1	1	1	1	1	1	1	1
Mackenzie River, N.W.T. ¹.....	...	...	...	...	...	...	...	...	...	...	...	7	7	7
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	181	200	206	211	215	213	214	221	235	245	245	262	265	264

¹ Northwest Territories in 1963, 1965 and 1968.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968

Speaker.....	HON. LUCIEN LAMOUREUX
Prime Minister.....	RT. HON. PIERRE ELLIOTT TRUDEAU
Leader of the Opposition.....	HON. ROBERT L. STANFIELD
Clerk of the House of Commons.....	ALISTAIR FRASER

NOTE.—The vote is summarized by provinces in Table 11, p. 76. The leaders of the political parties are indicated by asterisks (*). For Parliamentary Secretaries, see p. 61. This information, except the population of constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. Lib.=Liberal; P.C.=Progressive Conservative; N.D.P.=New Democratic Party; R.c.r.=Ralliement créditiste; Ind.=Independent. Party standing at General Election of June 25, 1968: 155 Liberal, 72 Progressive Conservative, 22 New Democratic Party, 14 Ralliement créditiste, and 1 Independent.

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Newfoundland—							
(7 members)							
Bonaville-Trinity-Concepton.....	67,876	35,823	25,624	14,823	F. MOORES.....	Harbour Grace...	P.C.
Burin-Burgoe.....	54,219	24,626	14,993	8,674	HON. D. JAMIESON.....	Swift Current.....	Lib.
Gander-Twillingate.....	71,620	32,842	20,085	10,601	J. H. LUNDRIAN.....	Gander.....	P.C.
Grand Falls-White Bay-Labrador.....	66,973	32,697	20,694	10,322	A. H. PEDDLE.....	Windsor.....	P.C.
Humber-St. George's-St. Barbe.....	77,380	33,220	22,665	9,765	J. MARSHALL.....	Corner Brook.....	P.C.
St. John's East.....	83,321	41,164	30,116	18,153	J. A. MCGRATH.....	St. John's.....	P.C.
St. John's West.....	72,007	37,222	27,393	15,379	W. C. CARTER.....	St. John's.....	P.C.
Prince Edward Island—							
(4 members)							
Cardigan.....	22,978	12,840	11,610	5,717	M. J. MCQUAID.....	Souris.....	P.C.
Egmont.....	31,034	15,212	13,534	7,182	D. MACDONALD.....	Alberton.....	P.C.
Hillsborough.....	32,192	18,627	15,897	8,328	H. N. MACQUARRIE.....	Victoria.....	P.C.
Malpeque.....	22,331	11,537	10,184	5,049	HON. J. A. MACLEAN.....	Belle Creek.....	P.C.
Nova Scotia—							
(11 members)							
Annapolis Valley.....	71,200	37,720	30,963	17,435	J. P. NOWLAN.....	Wolfville.....	P.C.
Cape Breton-East Richmond.....	65,292	32,771	27,867	11,583	D. MACINNIS.....	Glace Bay.....	P.C.
Cape Breton Highlands-Canso.....	57,092	31,675	27,578	13,725	HON. A. J. MACEachEN.....	Inverness.....	Lib.
Cape Breton-The Sydneys.....	67,526	34,882	29,206	14,971	R. MUIR.....	Sydney Mines.....	P.C.
Central Nova.....	60,639	35,085	28,743	16,720	R. MACEWAN.....	New Glasgow.....	P.C.
Cumberland-Colchester North.....	65,181	37,511	30,498	18,446	R. C. COATES.....	Amherst.....	P.C.
Dartmouth-Halifax East.....	90,286	45,022	35,961	19,694	M. FORRESTALL.....	Waverley.....	P.C.
Halifax.....	70,822	40,727	33,727	19,569	HON. R. L. STANFIELD*	Halifax.....	P.C.
Halifax-East Hants.....	85,070	46,513	37,559	22,323	R. MCLEAVE.....	Halifax.....	P.C.
South Shore.....	62,692	37,677	30,234	17,547	L. R. CROUSE.....	Lunenburg.....	P.C.
South Western Nova.....	60,239	33,208	28,064	14,543	L.-R. COMEAU.....	Saulnierville.....	P.C.
New Brunswick—							
(10 members)							
Carleton-Charlotte....	56,893	32,107	24,928	15,469	HON. H. J. FLEMING.....	Upper Woodstock.....	P.C.
Fundy-Royal.....	63,465	35,592	27,998	17,013	G. FAIRWEATHER.....	East Riverside.....	P.C.
Gloucester.....	59,903	28,458	22,457	12,196	H. BREAU.....	Tracadie.....	Lib.
Madawaska-Victoria.....	57,000	26,615	20,151	9,924	E. CORBIN.....	Edmundston.....	Lib.
Moncton.....	74,110	41,742	36,145	17,969	C. H. THOMAS.....	Moncton.....	P.C.
Northumberland-Miramichi.....	54,527	24,998	19,700	10,292	G. A. P. SMITH.....	Newcastle.....	Lib.
Restigouche.....	51,519	24,113	19,718	9,991	HON. J. E. DUBÉ.....	Campbellton.....	Lib.
Saint John-Lancaster.....	72,597	40,273	30,073	15,756	T. M. BELL.....	Saint John.....	P.C.
Westmorland-Kent.....	51,593	26,044	21,916	11,519	G. CROSSMAN.....	Buctouche.....	Lib.
York-Sunbury.....	75,151	37,970	31,600	17,394	J. C. MACRAE.....	Silverwood.....	P.C.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—							
(74 members)							
Abitibi.....	58,598	27,335	20,025	10,884	G. LAPRISE.....	LaSarre.....	R.cr.
Argenteuil.....	72,926	41,059	32,694	15,726	R.-B. MAJOR.....	Saint-Sauveur-des-Monts.....	Lib.
Beauce.....	70,727	36,352	28,593	13,428	R. RODRIGUE.....	Ville-Saint-Georges-Ouest.....	R.cr.
Beauharnois.....	73,207	40,519	29,307	17,203	G. LANIEL.....	Salaberry-de-Valleyfield.....	Lib.
Bellechasse.....	66,376	34,985	24,070	11,137	A. LAMBERT.....	Joly.....	R.cr.
Bertibier.....	62,233	34,608	23,378	10,818	A. YANAKIS.....	Saint-Gabriel-de-Brandon.....	Lib.
Bonaventure.....	58,837	27,653	19,300	10,144	A. BÉCHARD.....	Carleton.....	Lib.
Chambly.....	98,822	52,146	35,379	22,767	B. PILON.....	Beloeil.....	Lib.
Champlain.....	65,448	35,392	26,891	9,866	L. MATTE.....	Saint-Casimir.....	R.cr.
Charlevoix.....	63,969	34,015	23,112	9,487	Hon. M. ASSELIN.....	La Malbaie.....	P.C.
Chicoutimi.....	79,745	38,116	28,330	14,054	P. LANGLOIS.....	Chicoutimi.....	Lib.
Compton.....	65,074	33,004	25,652	11,961	H. LATULIPE.....	Lac-Mégantic.....	R.cr.
Drummond.....	74,966	38,208	30,601	11,667	Hon. J.-L. PEPIN.....	Drummondville.....	Lib.
Frontenac.....	67,762	33,651	27,283	12,298	B. DUMONT.....	Plessisville.....	R.cr.
Gaspé.....	55,359	26,804	20,545	9,208	A. CYR.....	Chandler.....	Lib.
Gatineau.....	70,618	36,147	27,112	14,348	G. CLERMONT.....	Thurso.....	Lib.
Hull.....	86,111	45,700	33,796	22,982	G. ISABELLE.....	Lucerne.....	Lib.
Joliette.....	76,723	42,074	29,395	12,464	R. LADONNE.....	Crabtree.....	P.C.
Kamouraska.....	65,582	33,335	22,046	8,762	C.-E. DIONNE.....	Saint-Pascal.....	R.cr.
Labelle.....	77,041	41,781	30,621	15,801	Hon. L. CADIEUX.....	Saint-Antoine-des-Laurentides.....	Lib.
Lac-Saint-Jean.....	58,079	26,413	20,373	9,325	M. LESSARD.....	Alma.....	Lib.
Langelier.....	67,615	41,484	30,058	11,439	Hon. J. MARCHAND.....	Quebec.....	Lib.
Lapointe.....	73,436	34,613	25,549	11,821	G. MARCEAU.....	Jonquière.....	Lib.
Laprairie.....	105,660	59,731	42,884	31,968	I. WATSON.....	Laprairie.....	Lib.
Lévis.....	75,911	41,579	33,308	12,227	R. GUAY.....	Lauzon.....	Lib.
Longueuil.....	91,553	48,866	32,316	19,080	Hon. J.-P. CÔTÉ.....	Longueuil.....	Lib.
Lotbinière.....	70,465	36,692	30,397	11,302	A. FORTIN.....	Victoriaville.....	R.cr.
Louis-Hébert.....	95,493	58,369	44,994	28,220	J.-C. CANTIN.....	Cap-Rouge.....	Lib.
Manicouagan.....	74,183	37,195	22,803	13,504	G. BLOUIN.....	Sept Îles.....	Lib.
Matane.....	52,465	24,878	17,360	9,207	P. DE BANÉ.....	Quebec.....	Lib.
Missisquoi.....	74,247	40,555	31,095	12,905	Y. FORREST.....	Magog.....	Lib.
Montmorency.....	97,541	53,644	42,152	17,327	O. LAFLAMME.....	Sainte-Foy.....	Lib.
Pontiac.....	59,755	30,896	21,186	10,250	T. LEFEBVRE.....	Davidson.....	Lib.
Portneuf.....	93,758	49,793	38,629	18,328	R. GODIN.....	Les Écureuils.....	R.cr.
Québec-Est.....	83,862	46,442	34,988	14,945	G. DUQUET.....	Quebec.....	Lib.
Richelieu.....	75,716	43,031	32,152	15,350	F. CÔTÉ.....	Sainte-Brigitte-des-Saults.....	Lib.
Richmond.....	64,150	31,302	25,128	11,853	L. BEAUDOIN.....	Bromptonville.....	R.cr.
Rimouski.....	70,978	35,146	24,807	12,073	G. LEBLANC.....	Rimouski.....	Lib.
Roberval.....	56,422	26,005	18,993	8,811	C.-A. GAUTHIER.....	Mistassini.....	R.cr.
Saint-Hyacinthe.....	78,230	44,804	35,245	16,389	Hon. J.-H.-T. RICARD.....	Saint-Hyacinthe.....	P.C.
Saint-Jean.....	77,700	41,820	31,129	15,878	W. SMITH.....	Hemmingford.....	Lib.
Saint-Maurice.....	75,068	39,212	31,700	13,895	Hon. J. CHRÉTIEN.....	Shawinigan.....	Lib.
Shefford.....	75,664	39,618	31,524	12,633	G. RONDEAU.....	Granby.....	R.cr.
Sherbrooke.....	89,693	51,070	38,575	15,270	P.-M. GÉRAVAIS.....	Sherbrooke.....	Lib.
Témiscamingue.....	59,723	27,866	21,665	12,532	R. CAOUETTE.....	Rouyn.....	R.cr.
Témiscouata.....	64,117	31,171	22,963	10,605	R. GENDRON.....	Rivière-du-Loup.....	Lib.
Terrebonne.....	92,821	51,625	35,106	21,191	J.-R. COMTOIS.....	Repentigny.....	Lib.
Trois-Rivières.....	93,818	52,274	39,066	17,592	J.-A. MONGRAIN.....	Trois-Rivières.....	Lib.
Vaudreuil.....	97,742	51,584	40,959	29,830	R. EMARD.....	Île-Perrot.....	Lib.
Villeneuve.....	61,022	29,880	21,462	10,073	O. TÉTRAULT.....	Val-d'Or.....	R.cr.
Island of Montreal and Ile Jésus—							
Ahuntsic.....	91,047	50,690	36,952	23,149	J.-L. ROCHON.....	Montreal.....	Lib.
Bourassa.....	103,078	54,791	36,927	19,778	J.-L. TRUDEL.....	Montreal-Nord.....	Lib.
Dollard.....	105,435	59,219	48,178	34,146	J.-P. Goyer.....	Saint-Laurent.....	Lib.
Duvernay.....	98,075	50,442	37,636	18,701	Hon. E. W. KIERANS.....	Hampstead.....	Lib.
Gamelin.....	92,611	50,846	35,619	19,051	A. PORTELANC.....	Montreal.....	Lib.
Hochelaga.....	72,880	40,424	22,641	12,080	Hon. G. PELLÉTER.....	Westmount.....	Lib.
Lachine.....	90,851	51,419	40,647	25,989	R. ROCK.....	Lachine.....	Lib.
Lafontaine.....	75,018	43,868	26,258	14,788	G.-C. LACHANCE.....	Montreal.....	Lib.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—concluded							
<i>Island of Montréal and</i>							
<i>Île Jésus—concluded</i>							
LaSalle.....	94,885	57,115	39,633	26,546	H.-P. LESSARD.....	Montreal.....	Lib.
Laurier.....	75,034	34,575	19,881	10,040	J.-E. LEBLANC.....	Montreal.....	Lib.
Laval.....	98,013	53,226	39,361	24,740	M. ROY.....	Ville-de-Laval.....	Lib.
Maisonneuve.....	79,721	46,010	28,078	15,784	J.-A. THOMAS.....	Montreal.....	Lib.
Mercier.....	104,113	55,787	37,861	19,077	P. BOULANGER.....	Pointe-aux-Trembles.....	Lib.
Mount Royal.....	87,529	51,896	41,810	37,402	Rt. Hon. P. E. TRUDEAU*.....	Montreal.....	Lib.
Notre-Dame-de-Grâce.....	80,199	44,693	36,008	25,959	W. ALLMAND.....	Montreal.....	Lib.
Outremont.....	82,020	44,046	31,964	24,219	A. NOËL.....	Outremont.....	Lib.
Papineau.....	76,592	40,139	23,744	14,379	A. OUELLET.....	Montreal.....	Lib.
Saint-Denis.....	79,193	36,741	24,453	17,022	M. PRUD'HOMME.....	Montreal.....	Lib.
Saint-Henri.....	72,867	36,143	20,866	12,792	G. LOISELLE.....	Montreal.....	Lib.
Saint-Jacques.....	64,562	30,344	16,896	9,701	J. GUILBAULT.....	Montreal.....	Lib.
Sainte-Marie.....	67,761	38,863	22,053	9,528	J.-G. VALADÉ.....	Montreal.....	P.C.
Saint-Michel.....	116,330	55,560	34,878	22,307	V. FORGET.....	Saint-Michel.....	Lib.
Verdun.....	76,832	44,542	30,322	22,436	Hon. B. MACKASEY.....	Verdun.....	Lib.
Westmount.....	81,688	51,439	39,983	31,104	Hon. C. M. DRURY.....	Westmount.....	Lib.
Ontario—							
<i>(83 members)</i>							
Algoma.....	48,081	26,213	18,977	9,542	M. FOSTER.....	Desbarats.....	Lib.
Brant.....	91,706	51,935	40,489	16,029	J. E. BROWN.....	Brantford.....	Lib.
Bruce.....	57,604	33,722	27,521	12,775	R. WHICHER.....	Warton.....	Lib.
Cochrane.....	55,750	26,877	20,357	9,803	R. W. STEWART.....	Cochrane.....	Lib.
Elgin.....	61,912	35,485	29,073	12,856	H. E. STAFFORD.....	St. Thomas.....	Lib.
Essex.....	78,352	40,991	29,840	14,707	E. WHELAN.....	Amherstburg.....	Lib.
Fort William.....	56,465	31,212	25,501	10,635	H. BADANAI.....	Fort William.....	Lib.
Frontenac-Lennox and Addington.....	57,066	31,556	25,283	11,801	D. ALKENBRACK.....	Napanee.....	P.C.
Glengarry-Prescott.....	60,214	32,044	24,377	14,970	V. ETHER.....	Glen Robertson.....	Lib.
Grenville-Carleton.....	91,635	54,006	44,334	21,250	G. BLAIR.....	Ottawa.....	Lib.
Grey-Simcoe.....	61,409	37,008	28,222	13,146	P. V. NOBLE.....	Shallow Lake.....	P.C.
Halton.....	87,817	47,589	37,320	17,837	R. L. WHITTING.....	Oakville.....	Lib.
Halton-Wentworth.....	99,185	58,543	47,648	19,563	J. MORISON.....	Dundas.....	Lib.
Hamilton East.....	78,925	41,788	30,790	15,273	Hon. J. C. MUNRO.....	Hamilton.....	Lib.
Hamilton Mountain.....	99,059	54,553	43,540	17,794	G. SULLIVAN.....	Hamilton.....	Lib.
Hamilton-Wentworth.....	87,431	48,686	38,251	14,979	C. D. GIBSON.....	Ancaster.....	Lib.
Hamilton West.....	81,787	45,941	33,959	13,580	L. M. ALEXANDER.....	Hamilton.....	P.C.
Hastings.....	60,643	33,934	27,846	13,555	L. GRILLS.....	Belleville.....	P.C.
Huron.....	59,605	32,086	26,995	14,652	R. E. MCKINLEY.....	Zurich.....	P.C.
Kenora-Rainy River.....	54,810	28,341	20,725	10,144	J. M. REID.....	Kenora.....	L-Lab.
Kent-Essex.....	78,644	43,674	31,125	15,195	H. W. DANFORTH.....	Blenheim.....	P.C.
Kingston and the Islands.....	79,857	42,602	32,951	16,234	Hon. E. J. BENSON.....	Kingston.....	Lib.
Kitchener.....	93,228	52,828	40,799	16,471	K. HYMMEN.....	Kitchener.....	Lib.
Lambton-Kent.....	66,421	37,599	28,151	14,460	M. T. MCCUTCHEON.....	Florence.....	P.C.
Lanark and Renfrew.....	57,967	34,140	27,948	13,156	M. MCBRIDE.....	Arnprior.....	Lib.
Leeds.....	65,412	36,457	29,304	13,536	D. M. CODE.....	Smiths Falls.....	P.C.
Lincoln.....	79,123	42,792	33,111	13,328	H. C. BARRETT.....	Thorold.....	Lib.
London East.....	82,682	44,737	31,983	11,823	C. TURNER.....	London.....	Lib.
London West.....	92,588	57,166	44,391	21,764	J. BUCHANAN.....	London.....	Lib.
Middlesex.....	79,018	45,483	35,275	15,986	J. LIND.....	London.....	Lib.
Niagara Falls.....	83,873	46,473	34,151	17,183	Hon. J. GREENE.....	Niagara Falls.....	Lib.
Nickel Belt.....	68,504	32,379	25,821	11,551	G.-J. SERRÉ.....	Chelmsford.....	Lib.
Nipissing.....	62,262	31,922	25,364	13,524	C. LEGAULT.....	Sturgeon Falls.....	Lib.
Norfolk-Haldimand.....	69,179	39,164	31,754	14,908	W. KNOWLES.....	Langton.....	P.C.
Northumberland-Durham.....	69,413	38,254	30,993	13,707	R. C. HONEY.....	Port Hope.....	Lib.
Ontario.....	72,560	40,496	31,924	13,483	N. A. CAFK.....	Pickering.....	Lib.
Oshawa-Whitby.....	98,458	55,685	45,757	15,224	J. E. BROADBENT.....	Oshawa.....	N.D.P.
Ottawa-Carleton.....	98,291	52,504	44,014	28,987	Hon. J. N. TURNER.....	Ottawa.....	Lib.
Ottawa Centre.....	73,339	45,370	34,306	19,578	Hon. G. MCLEATH.....	Ottawa.....	Lib.
Ottawa East.....	79,513	44,507	33,632	26,170	J.-T. RICHARD.....	Ottawa.....	Lib.
Ottawa West.....	94,365	53,724	45,364	23,750	L. FRANCIS.....	Ottawa.....	Lib.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
No.	No.	No.	No.				
Ontario—concluded							
Oxford.....	76,008	42,324	34,788	18,504	W. NESBITT.....	Woodstock.....	P.C.
Parry Sound-Muskoka.....	56,026	32,882	25,425	12,045	G. AIKEN.....	Gravenhurst.....	P.C.
Peel-Dufferin-Simcoe.....	94,857	50,586	40,372	18,950	B. S. BEER.....	Brampton.....	Lib.
Peel South.....	107,831	65,976	52,124	24,255	H. CHAPPEL.....	Cooksville.....	Lib.
Perth.....	69,259	39,451	31,062	14,959	Hon. J. W. MONTEITH.....	Stratford.....	P.C.
Peterborough.....	79,491	46,029	37,461	15,675	H. FAULKNER.....	Lakefield.....	Lib.
Port Arthur.....	57,028	29,984	22,952	11,079	Hon. R. K. ANDRAS.....	Port Arthur.....	Lib.
Prince Edward-Hastings.....	72,355	37,939	31,175	15,682	Hon. G. HEES.....	Cobourg.....	P.C.
Renfrew North.....	59,429	28,287	23,154	13,195	L. D. HOPKINS.....	Petawawa.....	Lib.
Sarnia.....	78,931	43,738	32,432	14,573	J. CULLEN.....	Sarnia.....	Lib.
Sault Ste. Marie.....	75,181	37,763	31,674	12,527	C. T. MURPHY.....	Sault Ste. Marie.....	Lib.
St. Catharines.....	91,990	53,455	40,149	18,100	J. C. McNULTY.....	St. Catharines.....	Lib.
Simcoe North.....	81,949	46,476	36,593	16,619	P. B. RYNDAR.....	Orillia.....	P.C.
Stromont-Dundas.....	89,961	38,662	22,632	17,014	Hon. L. LAMOUREUX.....	Cornwall.....	Ind.
Sudbury.....	88,393	47,855	37,791	19,672	J. JEROME.....	Sudbury.....	Lib.
Thunder Bay.....	56,405	27,333	20,765	9,540	B. K. PENNER.....	Dryden.....	Lib.
Timiskaming.....	50,845	27,105	21,043	8,482	A. PETERS.....	New Liskeard.....	N.D.P.
Timmins.....	55,064	27,835	22,244	11,141	J.-R. ROY.....	Timmins.....	Lib.
Victoria-Haliburton.....	54,359	33,580	26,723	12,621	W. C. SCOTT.....	Kinmount.....	P.C.
Waterloo.....	99,047	57,094	45,126	15,231	M. SALTSMAN.....	Galt.....	N.D.P.
Welland.....	80,599	44,526	35,162	17,335	D. R. TOLMIE.....	Welland.....	Lib.
Wellington.....	65,376	37,470	30,569	13,496	A. D. HALES.....	Guelph.....	P.C.
Wellington-Grey.....	67,269	33,310	27,491	12,118	M. HOWE.....	Arthur.....	P.C.
Windsor-Walkerville.....	86,164	48,296	35,214	17,090	M. MACGUGAN.....	Windsor.....	Lib.
Windsor West.....	86,164	46,970	30,765	16,442	H. GRAY.....	Windsor.....	Lib.
York North.....	100,480	59,010	47,094	24,054	B. DANSON.....	Willowdale.....	Lib.
York-Simcoe.....	81,755	45,782	35,395	15,906	J. ROBERTS.....	Newmarket.....	Lib.
Metropolitan Toronto—							
Broadview.....	74,761	36,874	25,631	10,406	J. GILBERT.....	Toronto.....	N.D.P.
Davenport.....	80,824	29,106	21,598	10,736	C. L. CACCIA.....	Toronto.....	Lib.
Don Valley.....	93,338	65,849	53,827	27,335	R. P. KAPLAN.....	Downsview.....	Lib.
Eglinton.....	81,137	51,315	39,606	23,215	Hon. M. SHARP.....	Toronto.....	Lib.
Etobicoke.....	125,866	71,562	57,569	32,066	A. GILLESPIE.....	Toronto.....	Lib.
Greenwood.....	81,350	43,932	32,461	12,117	A. BREWIN.....	Toronto.....	N.D.P.
High Park.....	83,817	50,350	38,645	16,260	W. DEAKON.....	Islington.....	Lib.
Lakeshore.....	82,391	45,939	33,942	14,464	K. ROBINSON.....	Toronto.....	Lib.
Lakeland.....	81,268	41,650	29,165	14,717	S. HADJASZ.....	Toronto.....	Lib.
Rosedale.....	77,943	47,013	33,577	19,011	Hon. D. S. MACDONALD.....	Toronto.....	Lib.
St. Paul's.....	71,703	48,074	35,925	20,981	I. WAHN.....	Toronto.....	Lib.
Scarborough East.....	113,603	64,115	49,740	23,701	M. P. O'CONNELL.....	Toronto.....	Lib.
Scarborough West.....	85,977	46,586	35,021	14,889	D. WEATHERHEAD.....	Willowdale.....	Lib.
Spadina.....	77,720	26,638	17,109	9,379	P. RYAN.....	Toronto.....	Lib.
Trinity.....	82,111	32,676	23,022	13,126	Hon. P. HELLYER.....	Toronto.....	Lib.
York Centre.....	120,013	62,822	47,862	26,758	J. E. WALKER.....	Toronto.....	Lib.
York East.....	90,488	58,062	43,740	19,320	S. OTTO.....	Toronto.....	Lib.
York-Scarborough.....	139,535	79,786	63,994	37,374	R. STANBURY.....	Ottawa.....	Lib.
York South.....	85,146	39,036	28,833	12,357	D. LEWIS.....	Toronto.....	N.D.P.
York West.....	114,646	59,553	45,937	20,416	P. G. GIVENS.....	Toronto.....	Lib.
Manitoba—							
(13 members)							
Brandon-Souris.....	63,750	36,380	29,204	15,060	Hon. W. DINSDALE.....	Brandon.....	P.C.
Churchill.....	63,826	34,839	21,798	9,009	R. SIMPSON.....	Flin Flon.....	P.C.
Dauphin.....	58,986	31,487	23,559	8,701	G. RITCHIE.....	Dauphin.....	P.C.
Lisgar.....	60,737	32,656	22,965	11,785	G. MUIR.....	Roland.....	P.C.
Marquette.....	61,990	31,875	26,303	12,706	C. STEWART.....	Minnedosa.....	P.C.
Portage.....	53,391	26,107	19,762	8,415	G. R. COBBE.....	Portage la Prairie.....	Lib.
Provencher.....	63,075	31,487	21,817	9,021	M. G. SMERCHANSKI.....	Winnipeg.....	Lib.
St. Boniface.....	94,132	53,071	42,839	22,032	J.-P. GUAY.....	St. Boniface.....	Lib.
Selkirk.....	91,024	49,612	39,104	17,310	E. SCHREYER.....	Winnipeg.....	N.D.P.
Winnipeg North.....	84,035	47,839	34,687	15,608	D. ORLKWOW.....	Winnipeg.....	N.D.P.
Winnipeg North Centre.....	79,039	45,390	30,671	14,880	S. H. KNOWLES.....	Winnipeg.....	N.D.P.
Winnipeg South.....	90,329	53,726	44,393	23,457	Hon. J. RICHARDSON.....	Winnipeg.....	Lib.
Winnipeg South Centre.....	98,752	57,094	46,170	23,775	E. B. OSLER.....	Winnipeg.....	Lib.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968—continued

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
No.	No.	No.	No.	No.			
Saskatchewan—							
(13 members)							
Assiniboia.....	62,869	32,994	28,645	9,636	A. B. DOUGLAS.....	Weyburn.....	Lib.
Battleford-Kindersley.....	69,765	35,236	28,544	10,583	R. THOMSON.....	Duperow.....	N.D.P.
Mackenzie.....	52,613	26,912	20,420	8,578	S. J. KORCHINSKI.....	Rama.....	P.C.
Meadow Lake.....	52,556	25,700	19,544	7,688	A. C. CADIEU.....	Spiritwood.....	P.C.
Moose Jaw.....	69,532	36,022	29,672	11,982	J. L. SKOBERG.....	Moose Jaw.....	N.D.P.
Prince Albert.....	73,062	40,127	32,014	17,850	Rt. Hon. J. G. Diefenbaker.....	Prince Albert.....	P.C.
Qu'Appelle-Moose Mountain.....	67,671	36,411	29,660	12,429	R. R. SOUTHAM.....	Gainsborough.....	P.C.
Regina East.....	90,047	49,358	39,527	13,641	J. BURTON.....	Regina.....	N.D.P.
Regina-Lake Centre.....	92,459	52,940	44,008	17,102	L. BENJAMIN.....	Regina.....	N.D.P.
Saskatoon-Biggar.....	86,538	49,682	37,511	15,928	A. P. GLEAVE.....	Saskatoon.....	N.D.P.
Saskatoon-Humboldt.....	97,034	54,246	44,490	15,210	Hon. O. E. LANG.....	Saskatoon.....	Lib.
Swift Current.....							
Maple Creek.....	65,774	35,233	28,572	11,237	J. McINTOSH.....	Swift Current.....	P.C.
Yorkton-Melville.....	75,424	42,737	34,186	13,212	L. NYSTROM.....	Yorkton.....	N.D.P.
Alberta—							
(19 members)							
Athabasca.....	61,969	27,755	18,990	8,852	P. YEWCHUK.....	Lac-la-Biche.....	P.C.
Battle River.....	62,602	32,372	24,577	15,725	C. DOWNEY.....	Castor.....	P.C.
Calgary Centre.....	80,057	50,808	36,305	16,977	Hon. D. S. HARKNESS.....	Calgary.....	P.C.
Calgary North.....	108,224	58,006	43,733	21,708	E. M. WOOLLIAMS.....	Calgary.....	P.C.
Calgary South.....	104,752	56,934	43,233	20,472	P. MAHONEY.....	Calgary.....	Lib.
Crowfoot.....	56,403	29,497	22,582	16,508	J. H. HORNER.....	Pollockville.....	P.C.
Edmonton Centre.....	88,896	51,388	35,207	12,062	S. E. PAPROSKI.....	Edmonton.....	P.C.
Edmonton East.....	97,501	50,681	34,521	15,764	W. SKOREYKO.....	Edmonton.....	P.C.
Edmonton-Strathcona.....	92,651	54,336	40,474	21,074	H. HARRIES.....	Edmonton.....	Lib.
Edmonton West.....	101,480	51,907	39,923	19,612	Hon. M. LAMBERT.....	Edmonton.....	P.C.
Lethbridge.....	70,395	36,224	26,645	11,901	D. R. GUNDBLOCK.....	Lethbridge.....	P.C.
Medicine Hat.....	63,442	32,327	24,589	9,015	Hon. H. A. OLSON.....	Medicine Hat.....	Lib.
Palliser.....	70,494	36,943	28,279	16,967	S. SCHUMACHER.....	Drumheller.....	P.C.
Peace River.....	60,832	30,521	21,420	11,825	G. BALDWIN.....	Peace River.....	P.C.
Pembina.....	81,306	41,167	30,022	17,578	J. BIGG.....	Westlock.....	P.C.
Red Deer.....	75,993	38,198	28,988	17,930	R. N. THOMPSON.....	Red Deer.....	P.C.
Rocky Mountain.....	55,553	28,360	19,654	7,355	A. B. SULATYCKY.....	Whitecourt.....	Lib.
Vegreville.....	63,842	33,142	24,673	15,855	D. MAZANKOWSKI.....	Vegreville.....	P.C.
Wetaskiwin.....	66,811	33,999	23,601	15,178	H. A. MOORE.....	Wetaskiwin.....	P.C.
British Columbia—							
(23 members)							
Burnaby-Richmond.....	86,449	48,947	38,350	16,182	T. GOODE.....	Delta.....	Lib.
Burnaby-Seymour.....	87,043	50,269	39,766	17,891	R. PERRAULT.....	North Vancouver.....	Lib.
Capilano.....	92,326	54,260	42,782	28,292	Hon. J. DAVIS.....	West Vancouver.....	Lib.
Coast Chilcotin.....	61,248	31,494	21,913	10,292	P. ST-PIERRE.....	Big Creek.....	Lib.
Comox-Alberni.....	77,614	41,274	30,573	11,939	R. J. J. DURANTE.....	Port Alberni.....	Lib.
Esquimalt-Saanich.....	90,889	52,587	42,000	16,501	D. ANDERSON.....	Victoria.....	Lib.
Fraser Valley East.....	70,566	37,838	28,107	9,689	J. PRINGLE.....	Chilliwack.....	Lib.
Fraser Valley West.....	85,053	47,812	36,593	14,410	M. ROSE.....	Coquitlam.....	N.D.P.
Kamloops-Cariboo.....	82,532	41,888	32,303	13,000	L. S. MARCHAND.....	Kamloops.....	Lib.
Kootenay West.....	69,284	36,210	27,287	12,181	R. HARDING.....	Silverton.....	N.D.P.
Nanaimo-Cowichan-The Islands.....	81,031	47,424	36,891	15,273	C. CAMERON ¹	Lantzville.....	N.D.P.
New Westminster.....	88,445	52,204	40,849	18,083	D. A. HOGARTH.....	Coquitlam.....	Lib.
Okanagan Boundary.....	77,937	47,555	37,973	12,321	B. HOWARD.....	Penticton.....	Lib.
Okanagan-Kootenay.....	74,378	39,897	31,071	11,370	D. STEWART.....	Kimberley.....	Lib.
Prince George-Peace River.....	92,778	44,925	31,506	10,926	R. BORRIE.....	Prince George.....	Lib.
Skeena.....	73,682	33,940	24,117	12,471	F. HOWARD.....	Terrace.....	N.D.P.
Surrey.....	85,614	49,172	36,526	16,186	B. MATHIE.....	North Surrey.....	N.D.P.
Vancouver Centre.....	86,307	64,498	45,671	25,426	Hon. R. BASFORD.....	Vancouver.....	Lib.
Vancouver East.....	79,394	41,219	27,014	13,339	H. E. WINCH.....	Vancouver.....	N.D.P.
Vancouver Kingsway.....	81,226	43,818	31,749	15,599	GRACE MACINNIS.....	Vancouver.....	N.D.P.

¹ Died July 28, 1968; see Appendix for by-election.

10.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-eighth General Election, June 25, 1968 and Revised to Dec. 31, 1968—concluded

Province and Electoral District	Population, Census 1966	Voters on List	Total Votes Polled (incl. rejections)	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
British Columbia—concluded							
Vancouver Quadra.....	80,140	47,381	38,484	20,788	G. DEACHMAN.....	Vanvouver.....	Lib.
Vancouver South.....	86,612	52,044	40,324	19,757	Hon. A. LAING.....	Vancouver.....	Lib.
Victoria.....	83,126	53,303	42,229	18,401	D. GROOS.....	Victoria.....	Lib.
Yukon Territory—(1 member)							
Yukon.....	14,382	7,559	6,563	3,110	E. NIELSEN.....	Whitehorse.....	P.C.
Northwest Territories—(1 member)							
Northwest Territories.	28,738	13,807	9,563	6,018	R. J. ORANGE.....	Yellowknife.....	Lib.

Indemnities and Allowances.—Members of the Senate and House of Commons receive a sessional allowance at the rate of \$12,000 per annum. In addition, for each session of Parliament, they may be paid travelling expenses between their place of residence or constituency and Ottawa as may be required for the performance of their duties as members of the Senate and House of Commons. Senators receive an annual expense allowance of \$3,000 and members of the House of Commons receive an expense allowance of \$6,000, neither of which is subject to income tax, and is payable quarterly. The member of the Senate occupying the recognized position as Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$10,000 and to the member of the Senate occupying the recognized position as Opposition Leader in the Senate there is paid, in addition to his sessional allowance, an annual allowance of \$6,000; but if the Leader of the Government is in receipt of a salary under the Salaries Act the annual allowance is not paid. The remuneration of the Prime Minister is \$25,000 a year and of a Cabinet Minister and the Leader of the Opposition in the House of Commons \$15,000 a year in addition to the sessional and expense allowances each receives as a member of Parliament. The remuneration of a Minister without Portfolio is \$7,500 a year in addition to the sessional and expense allowances, the latter being not taxable. Additional annual allowances of \$4,000 (beyond the above-noted sessional allowance) are provided to each Leader of a Party having a recognized membership of twelve or more persons in the House of Commons other than the Prime Minister and the member occupying the recognized position as Leader of the Opposition in the House of Commons and, likewise, to the Chief Government Whip and to the Chief Opposition Whip in the House of Commons. The Speaker of the Senate and the Speaker of the House of Commons each receives, besides the sessional allowance and expense allowance, a salary of \$9,000 per annum. The Deputy Speaker of the House of Commons receives a salary of \$6,000 per annum. The Speakers of the Senate and the House of Commons are also entitled to \$3,000 in lieu of residence and the Deputy Speaker of the House of Commons an allowance of \$1,500 in lieu of residence; these allowances are not taxable. The Deputy Chairman of Committees receives an annual allowance of \$4,000. Parliamentary Secretaries to the Ministers of the Crown receive an annual allowance of \$4,000 a year, in addition to their sessional and expense allowances. A motor vehicle allowance of \$2,000 is paid to each Minister

of the Crown and to the recognized Leader of the Opposition in the House of Commons, and a motor vehicle allowance of \$1,000 is paid to the Speakers of the Senate and of the House of Commons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 6 p.c. of his full sessional indemnity toward his retirement allowance, which is based on five twelfths of the total contributions, paid or elected to be paid; to the widow of an ex-member is paid three fifths of the allowance paid or payable to the ex-member at the time of his death. The maximum allowance payable to an ex-member is \$9,000 per annum and the maximum payable to the widow of an ex-member is \$5,400 per annum.

An Act to make provision for the retirement of members of the Senate (SC 1965, c. 4) entitles a Senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Act. Senators appointed prior to that date and who have not attained the age of 75 years, who elect under the provisions of this Act, are also entitled to become contributors. Under the provisions of the Retirement Act, a Senator contributes, by reservation, 6 p.c. of his sessional indemnity to the Consolidated Revenue Fund. A Senator appointed before June 2, 1965 who (a) within one year of attaining the age of 75 years resigns his place in the Senate or (b) resigns due to some permanent infirmity disabling him from performing his duties in the Senate, may be granted an annuity equal to two thirds of his sessional indemnity for life. The widow of a person granted such an annuity may receive an annuity equal to one third of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from the Consolidated Revenue Fund an allowance of two thirds of the annual salary provided for Prime Ministers under the Salaries Act, the allowance to commence when the former Prime Minister ceases to hold office, or attains the age of 70 years, whichever is the later, and to continue during his lifetime. The widow of a Prime Minister will receive an annual payment of one third of the allowance that was being paid or that would have been paid to her husband, where he dies without receiving the allowance, such allowance to commence immediately after the death of her husband and to continue during her natural life or until her remarriage. None of these allowances is payable while the recipient is a Senator or a member of the House of Commons.

The Federal Franchise.—The present federal franchise laws are contained in the Canada Elections Act (SC 1960, c. 39). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years, are ordinarily resident in the electoral district on the date of the issue of the writ ordering an election and, in the case of British subjects other than Canadian citizens, have been ordinarily resident in Canada for twelve months prior to polling day at such election. Persons denied the right to vote are:—

- (1) the Chief Electoral Officer and the Assistant Chief Electoral Officer;
- (2) judges appointed by the Governor General in Council;
- (3) the returning officer for each electoral district;
- (4) persons undergoing punishment as inmates of any penal institution for the commission of any offence;
- (5) persons restrained of their liberty or deprived of the management of their property by reason of mental disease; and
- (6) persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property". Legislation proclaimed on the above-mentioned date confers upon all Indians who have attained the age of 21 years the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act. The Eskimos who are Canadian citizens

possess the right to vote in federal elections, and the assumption of that right in the far-flung communities of the Canadian Far North has grown with Government establishment of electoral districts and polling facilities.

The Canadian Forces Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

11.—Voters on the Lists and Votes Polled at the Federal General Elections of 1962, 1963, 1965 and 1968

Note.—Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1945-49 edition, p. 94; those for 1940 in the 1956 edition, p. 81; those for 1945 in the 1957-58 edition, p. 57; those for 1949, 1953 and 1957 in the 1962 edition, p. 71; and those for 1958 in the 1966 edition, p. 90.

Province or Territory	Voters on the Lists				Votes Polled			
	1962	1963	1965	1968	1962	1963	1965	1968
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	215,565	221,321	226,082	237,594	155,263	152,175	148,392	161,570
Prince Edward Island.....	56,542	57,029	56,484	58,216	73,509 ¹	69,486 ¹	72,006 ¹	51,225
Nova Scotia.....	398,161	401,874	401,521	412,791	423,556 ²	419,352 ²	420,146 ²	339,600
New Brunswick.....	302,313	304,732	304,734	317,912	252,053	245,557	244,184	254,716
Quebec.....	2,728,191	2,807,634	2,933,031	3,083,260	2,117,644	2,143,246	2,073,314	2,229,345
Ontario.....	3,397,647	3,455,363	3,609,895	3,846,064	2,719,020	2,799,870	2,770,222	2,973,745
Manitoba.....	508,920	516,525	517,928	531,563	393,023	401,870	382,362	403,272
Saskatchewan.....	502,495	505,551	508,733	517,598	426,426	419,973	404,631	416,793
Alberta.....	680,253	700,920	725,447	774,565	505,752	552,164	534,870	567,416
British Columbia.....	891,686	921,074	972,063	1,059,959	691,930	740,229	731,438	804,108
Yukon Territory ³	6,762	6,878	6,660	7,559	5,978	6,051	5,760	6,563
Northwest Territories ⁴	11,790	11,856	12,326	13,807	8,502	8,663	9,403	9,563
Totals.....	9,700,325	9,910,757	10,274,904	10,860,888	7,772,656	7,958,636	7,796,728	8,217,916

¹ Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1965, 26,250 voters on the list cast 44,895 votes.

² Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1965, 124,633 voters on the list cast 184,153 votes.

³ Electoral District of Yukon.

⁴ Electoral District of Mackenzie River in 1962 and Electoral District of Northwest Territories in 1963, 1965 and 1968.

Subsection 3.—The Judiciary

The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

Supreme Court of Canada.—This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Com-

mons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of \$10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave, the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

12.—Chief Justice and Judges of the Supreme Court of Canada, as at Oct. 6, 1968

(In order of seniority)

Name	Date of Appointment
Rt. Hon. Mr. JOHN R. CARTWRIGHT, Chief Justice of Canada.....	Sept. 1, 1967 ¹
Hon. Mr. Justice J. H. GERALD FAUTEUX.....	Dec. 23, 1949
Hon. Mr. Justice DOUGLAS CHARLES ABBOTT.....	July 1, 1954
Hon. Mr. Justice RONALD MARTLAND.....	Jan. 15, 1958
Hon. Mr. Justice WILFRED JUDSON.....	Feb. 5, 1958
Hon. Mr. Justice ROLAND A. RITCHIE.....	May 5, 1959
Hon. Mr. Justice EMMETT M. HALL.....	Nov. 23, 1962
Hon. Mr. Justice WISHART FLETT SPENCE.....	May 30, 1963
Hon. Mr. Justice LOUIS-PHILIPPE PIGEON.....	Oct. 6, 1967

¹ First appointed a Judge of the Supreme Court, Dec. 23, 1949.

Exchequer Court of Canada.—The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and six puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds \$500; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed \$500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the Admiralty Act (RSC 1952, c. 1). Under this statute, the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court

exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.—*Railway Act.*—The Railway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada and by the National Transportation Act, 1967 (SC 1966-67, c. 69) to the Canadian Transport Commission. This court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.—By virtue of Sect. 91(21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.—By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

National Defence Act.—The Court Martial Appeal Court was established in 1959 by an amendment to the National Defence Act (SC 1959, c. 5). The judges of the Court are not fewer than four judges of the Exchequer Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. The Governor in Council designates one of the judges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by a court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court of Canada on a question of law only.

Provincial and Territorial Judiciaries*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159 and amendments). Under Sect. 99, the judges of the superior courts hold office during good behaviour but are

* More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55; a re-organization of the Supreme Court of Nova Scotia became effective Aug. 1, 1966.

removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the presiding officers of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec, there are county or district courts of each province with limited jurisdiction varying from \$500 to \$2,500 in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are *ex officio* judges of the Territorial Court of the Northwest Territories and vice versa. There is a Court of Appeal for each of the Territories. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

Section 2.—Provincial and Territorial Governments*

In each of the provinces, The Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on p. 57 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly. The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (Br. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act, the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, although wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, main-

* Except where indicated, the information given in this Section is brought up to Dec. 31, 1968. Any important changes occurring between that date (or the date given) and the time of going to press will be found in an Appendix to this volume.

tenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment in enforcing any law of the province relating to any of the aforesaid subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion in the federation.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

Provincial Franchise.—Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person, male or female, at a specified age (18 to 21 years) who is a Canadian citizen or (in certain provinces) other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Voting privileges are given to persons in Prince Edward Island, Quebec and Saskatchewan at the age of 18, in Newfoundland, Alberta and British Columbia at 19 years, and in the remaining provinces at 21 years.

Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly has 42 members elected for a term of five years. The Legislature elected Sept. 8, 1966 is the 34th in the history of Newfoundland and the 6th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had four Lieutenant-Governors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col. Sir Leonard Outerbridge commissioned Sept. 5, 1949; the Hon. Campbell Macpherson commissioned Dec. 16, 1957; and the Hon. Fabian O'Dea commissioned Mar. 1, 1963. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Dec. 31, 1968.

The Premier receives a salary of \$12,000 and the other Cabinet Ministers \$11,000 per annum, plus a sessional indemnity of \$5,666.67 and a travelling and expense allowance of \$2,833.33. Each member of the House of Assembly receives a sessional indemnity of \$5,666.67 plus a travelling and expense allowance of \$2,833.33. An additional allowance of \$5,000 is made to the Leader of the Opposition.

13.—Legislatures of Newfoundland, 1949-68, as at Dec. 31, 1968

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
May 27, 1949	1st.....	4	July 11, 1949	Nov. 3, 1951
Nov. 28, 1951	2nd.....	7	Mar. 11, 1952	Sept. 10, 1956
Oct. 2, 1956	3rd.....	3	Mar. 19, 1957	July 28, 1959
Aug. 20, 1959	4th.....	4	Apr. 20, 1960	Mar. 20, 1962
Nov. 19, 1962	5th.....	4	Mar. 20, 1963	Aug. 17, 1966
Sept. 8, 1966	6th.....	1	Nov. 30, 1966	1

¹ Life of Legislature not expired at Dec. 31, 1968.

14.—First Ministry of Newfoundland, as at Dec. 31, 1968

(Party standing at latest General Election, Sept. 8, 1966: 38 Liberal and 4 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier.....	Hon. J. R. SMALLWOOD.....	Apr. 1, 1949	Apr. 1, 1949
President of the Council.....	Hon. L. R. CURTIS.....	Apr. 1, 1949	Sept. 8, 1966
Minister of Labour.....	Hon. W. J. KEOUGH.....	July 29, 1949	June 12, 1966
Minister of Public Works.....	Hon. J. R. CHALKER.....	Apr. 4, 1950	May 1, 1957
Minister without Portfolio.....	Hon. P. J. LEWIS.....	Dec. 15, 1951	Dec. 15, 1951
Minister of Education.....	Hon. F. W. ROWE.....	May 21, 1952	July 17, 1968
Minister of Provincial Affairs.....	Hon. G. A. FRECKER.....	Aug. 26, 1959	Dec. 7, 1964
Minister of Highways.....	Hon. E. S. JONES.....	Dec. 7, 1964	Dec. 7, 1964
Minister of Finance.....	Hon. H. R. V. EARLE.....	Dec. 7, 1964	Dec. 7, 1964
Minister of Justice and Minister of Health...	Hon. T. A. HICKMAN.....	July 28, 1966	{Sept. 8, 1966 May 17, 1968}
Minister of Fisheries and Minister of Community and Social Development.....	Hon. A. J. MALONEY.....	Aug. 8, 1966	{Aug. 8, 1966 Sept. 26, 1967}
Minister of Labrador Affairs.....	Hon. E. W. WINSOR.....	July 17, 1968	July 17, 1968
Minister without Portfolio.....	Hon. G. I. HILL.....	July 17, 1968	July 17, 1968
Minister without Portfolio.....	Hon. S. A. NEARY.....	July 17, 1968	July 17, 1968
Minister of Public Welfare.....	Hon. E. M. ROBERTS.....	July 17, 1968	July 17, 1968
Minister of Mines, Agriculture and Resources	Hon. W. R. CALLAHAN.....	July 17, 1968	July 17, 1968
Minister of Municipal Affairs and Supply.....	Hon. J. A. NOLAN.....	July 17, 1968	July 17, 1968
Minister without Portfolio.....	Hon. W. N. ROWE.....	July 17, 1968	July 17, 1968

Subsection 2.—Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105; since that date, the position has been held by the Hon. F. W. Hyndman, appointed effective Mar. 31, 1958, followed by the Hon. W. J. MacDonald, appointed effective Aug. 1, 1963.

The Legislative Assembly elected May 30 and July 11, 1966 is the 51st in the history of Prince Edward Island Legislatures and the 26th since Confederation. It has 32 members from 16 electoral districts who may serve for a statutory term of five years. Each district elects one Councillor and one Assemblyman. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 105. The Hon. Walter R. Shaw was Premier from Sept. 16, 1959 until the present Premier took office following the General Election of May 30, 1966.

The annual salary of the Premier is \$9,000, of a Cabinet Minister \$6,000 and of a Minister without Portfolio \$3,600. A member of the Assembly receives \$2,666.67 for each regular Session attended by him and an additional amount of \$1,333.33, tax-free, for travelling and other expenses incurred in connection with Session attendance and representing his district; the Speaker of the Assembly receives a further additional sum of \$1,000 and an additional amount of \$500, tax-free, for travelling and other expenses incurred in connection with his official duties for each Session; to cover like expenditures the Deputy Speaker receives a further additional sum of \$600 and an additional amount of \$300, tax-free, and the Leader of the Opposition a further additional sum of \$1,666.67 and an additional amount of \$833.33, tax-free. Payment for indemnity for travelling and other expenses incurred by a member of the Legislature, the Speaker, the Deputy Speaker and the Leader of the Opposition accrue from his election to the Legislature and are paid monthly. No sessional indemnity or expenses are paid for any special Session of the Legislature.

15.—Legislatures of Prince Edward Island, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75; for 1924-35 in the 1935 edition, p. 110; and for 1936-47 in the 1963-64 edition, p. 82.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Apr. 26, 1951	22nd.....	6	Oct. 23, 1951	Apr. 27, 1955
May 25, 1955	23rd.....	4	Feb. 2, 1956	Aug. 3, 1959
Sept. 1, 1959	24th.....	4	Mar. 1, 1960	Nov. 8, 1962
Dec. 10, 1962	25th.....	4	Mar. 14, 1963	Apr. 14, 1966
May 30, 1966	26th.....	1	Nov. 23, 1966	1

¹ Life of Legislature not expired at Dec. 31, 1968.

16.—Twenty-sixth Ministry of Prince Edward Island, as at Dec. 31, 1968

(Party standing at latest General Election, May 30 and July 11, 1966: 17 Liberal and 15 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Attorney and Advocate General	Hon. ALEXANDER B. CAMPBELL...	July 28, 1966	July 28, 1966
Minister of Public Works and Minister of Highways.....	Hon. GEORGE J. FERGUSON.....	July 28, 1966	July 28, 1966
Minister of Education and President of the Executive Council.....	Hon. GORDON L. BENNETT.....	July 28, 1966	July 28, 1966
Provincial Secretary and Provincial Treasurer.....	Hon. T. EARLE HICKEY.....	July 28, 1966	July 28, 1966
Minister of Health and Minister of Municipal Affairs.....	Hon. KEIR CLARK.....	June 11, 1953	July 28, 1966
Minister of Industry and Natural Resources and Minister of Fisheries.....	Hon. CECIL A. MILLER.....	July 28, 1966	July 28, 1966
Minister of Welfare and Minister of Tourist Development.....	Hon. M. LORNE BONNELL.....	June 16, 1955	July 28, 1966
Minister of Labour and Manpower Resources.....	Hon. J. ELMER BLANCHARD.....	July 28, 1966	July 28, 1966
Minister of Agriculture.....	Hon. DANIEL J. MACDONALD.....	July 28, 1966	July 28, 1966
Minister without Portfolio.....	Hon. ROBERT E. CAMPBELL.....	Nov. 30, 1966	Nov. 30, 1966

Subsection 3.—Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 106; since that date the position has been held by Maj.-Gen. the Hon. E. C. Plow, commissioned to office Sept. 1, 1958, followed by the Hon. H. P. MacKeen, commissioned to office Mar. 1, 1963, and the Hon. Victor deB. Oland, commissioned to office July 22, 1968.

The Legislature has 46 members elected for a maximum term of five years. The Legislature elected May 30, 1967 is the 49th in Nova Scotia's history and the 26th since Confederation. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 107; the Hon. Walter R. Shaw was the Premier at that time and held office until 1967 when the present Premier assumed office.

The Premier of the province receives a salary of \$12,000 per annum and each Cabinet Minister a salary of \$10,000 per annum and \$800 per annum as expenses of representation. Each member of the House of Assembly receives a sessional indemnity of \$4,000 and an allowance of \$2,000 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of \$7,200 and an \$800 representation allowance in addition to his sessional indemnity.

17.—Legislatures of Nova Scotia, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76; for 1924-33 in the 1938 edition, p. 111; and for 1933-49 in the 1963-64 edition, p. 83.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
May 26, 1953	22nd.....	3	Feb. 24, 1954	Sept. 20, 1956
Oct. 30, 1956	23rd.....	3	Feb. 27, 1957	Apr. 26, 1960
June 7, 1960	24th.....	3	Feb. 8, 1961	Aug. 29, 1963
Oct. 8, 1963	25th.....	5	Feb. 6, 1964	Apr. 20, 1967
May 30, 1967	26th.....	1	Dec. 1, 1967	1

¹ Life of Legislature not expired at Dec. 31, 1968.

18.—Seventeenth Ministry of Nova Scotia, as at Dec. 31, 1968

(Party standing at latest General Election, May 30, 1967: 40 Progressive Conservative and 6 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and Chairman of the Nova Scotia Power Commission.....	Hon. GEORGE I. SMITH.....	Nov. 20, 1956	Sept. 13, 1967
Attorney General and Minister of Public Health.....	Hon. RICHARD A. DONAHOE.....	Nov. 20, 1956	Nov. 20, 1956
Provincial Secretary.....	Hon. EDWARD D. HALBURTON...	Nov. 20, 1956	May 10, 1968
Minister of Finance and Economics, Minister under the Water Act and Minister under the Industrial Estates Limited Act.....	Hon. W. S. K. JONES.....	Apr. 21, 1960	May 10, 1968
Minister of Mines and Minister in charge of the Liquor Control Act.....	Hon. DONALD M. SMITH.....	Oct. 13, 1960	(Dec. 12, 1961 Oct. 13, 1960)
Minister without Portfolio.....	Hon. DONALD R. MACLEOD.....	July 6, 1964	July 6, 1964
Minister of Fisheries and Minister, Housing Development Act.....	Hon. JAMES M. HARDING.....	July 6, 1964	May 10, 1968
Minister of Labour and Minister of Trade and Industry.....	Hon. THOMAS J. McKEOUGH.....	July 6, 1964	Dec. 21, 1966
Minister of Highways.....	Hon. IRVIN W. AKERLEY.....	July 6, 1964	May 10, 1968
Minister of Education.....	Hon. GERALD J. DOUCET.....	July 6, 1964	Dec. 14, 1967
Minister of Agriculture and Marketing and Minister of Municipal Affairs.....	Hon. HARVEY A. VENIOT.....	May 10, 1968	(May 10, 1968 July 16, 1968)
Minister of Public Works and Minister of Lands and Forests.....	Hon. GEORGE A. SNOW.....	Sept. 4, 1968	Sept. 4, 1968
Minister of Public Welfare and Minister in charge of EMO.....	Hon. PERCY GAUM.....	July 16, 1968	July 16, 1968

Subsection 4.—New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors since Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 108; since that date, the position has been held by the Hon. J. Leonard O'Brien, appointed June 6, 1958, followed by the Hon. John B. McNair, appointed June 9, 1965, and the Hon. W. S. Bird appointed Feb. 1, 1968.

The Legislature elected Oct. 23, 1967 is the 46th in New Brunswick's history and the 19th since Confederation. It has 55 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108; the present Premier assumed office in 1960.

The Premier receives \$20,000 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is \$12,000 and the amount paid as indemnity to each member of the House of Assembly is \$5,000 plus an additional \$2,500 allowance for expenses. The Leader of the Opposition receives an additional \$8,000 and the Speaker receives an allowance of \$1,000 in addition to the regular indemnity.

19.—Legislatures of New Brunswick, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77; for 1924-35 in the 1938 edition, p. 112; and for 1936-48 in the 1963-64 edition, p. 84.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Sept. 22, 1952	42nd.....	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	43rd.....	4	Feb. 21, 1957	May 19, 1960
June 27, 1960	44th.....	3	Nov. 17, 1960	Mar. 12, 1963
Apr. 22, 1963	45th.....	5	May 28, 1963	Sept. 8, 1967
Oct. 23, 1967	46th.....	1	Feb. 27, 1968	1

¹ Life of Legislature not expired at Dec. 31, 1968.

20.—Twenty-third Ministry of New Brunswick, as at Dec. 31, 1968

(Party standing at latest General Election, Oct. 23, 1967: 32 Liberal and 26 Progressive Conservative.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier.....	Hon. LOUIS J. ROBICHAUD.....	July 12, 1960	July 12, 1960
Minister of Justice.....	Hon. BERNARD A. JEAN.....	Apr. 6, 1966	Apr. 6, 1966
Minister of Finance.....	Hon. L. G. DESBRISAY.....	July 12, 1960	July 12, 1960
Provincial Secretary.....	Hon. J. E. LEBLANC.....	July 12, 1960	May 18, 1965
Minister of Highways.....	Hon. A. F. RICHARD.....	July 12, 1960	July 12, 1960
Minister of Public Works.....	Hon. R. D. DOUCET.....	Nov. 15, 1967	Nov. 15, 1967
Minister of Natural Resources.....	Hon. WILLIAM R. DUFFIE.....	July 12, 1960	Mar. 22, 1966
Minister of Agriculture and Rural Development.....	Hon. J. ADRIEN LEVESQUE.....	July 12, 1960	July 12, 1960
Minister of Health and Welfare.....	Hon. L. NORBERT THERIAULT.....	May 18, 1965	Nov. 15, 1967
Minister of Labour.....	Hon. H. H. WILLIAMSON.....	Nov. 15, 1967	Nov. 15, 1967
Minister of Education.....	Hon. W. W. MELDRUM.....	May 18, 1965	Apr. 6, 1966
Minister of Municipal Affairs.....	Hon. B. F. NADEAU.....	May 18, 1965	May 18, 1965
Minister of Fisheries.....	Hon. R. ERNEST RICHARD.....	May 28, 1963	July 8, 1963
Minister of Youth.....	Hon. LOUIS J. ROBICHAUD (acting).....	.....	Sept. 16, 1968
Minister of Economic Growth.....	Hon. R. J. HIGGINS.....	Nov. 15, 1967	Nov. 15, 1967
Chairman, New Brunswick Electric Power Commission.....	Hon. H. GRAHAM CROCKER.....	July 12, 1960	May 18, 1965

Subsection 5.—Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a National Assembly. The Legislative Council—the upper chamber of the Quebec Government for 101 years—was abolished by Act of the Quebec Legislature on Nov. 29, 1968, effective Dec. 31, 1968, and by the same Act the name of the Legislative Assembly was changed to “National Assembly of Quebec”.

Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109; since that date the position has been held by the Hon. Onésime Gagnon, commissioned to office Feb. 14, 1958, followed by the Hon. Paul Comtois, commissioned to office Oct. 6, 1961, and the Hon. Hugues Lapointe, commissioned to office Feb. 22, 1966.

The National Assembly has 108 elected members elected for a maximum period of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 110; the Hon. Jean Lesage became Premier in 1960, the Hon. Daniel Johnson in 1966, and the Hon. Jean-Jacques Bertrand on Sept. 26, 1968.

Each member of the National Assembly receives a sessional indemnity of \$12,000 and an expense allowance of \$6,000. In addition to this indemnity and allowance, the Premier receives an annual indemnity of \$16,000, a representation allowance of \$4,000 and an allowance in lieu of residence of \$2,000; Ministers with Portfolio receive an annual indemnity of \$12,000, plus a supplement of \$3,000 for representation; Ministers without Portfolio receive an indemnity of \$12,000, plus a representation allowance of \$3,000; the Speaker (President) receives an indemnity of \$10,000, a representation allowance of \$2,000 and an allowance in lieu of residence of \$1,000; the Deputy Speaker (Vice-president) receives an indemnity of \$5,000 and a representation allowance of \$1,000. The Leader of the Opposition receives an indemnity of \$10,000, a representation allowance of \$3,000 and an allowance in lieu of residence of \$2,000.

21.—Legislatures of Quebec, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78; for 1924-35 in the 1938 edition, p. 113; and for 1936-48 in the 1963-64 edition, p. 85.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 16, 1952	24th.....	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th.....	4	Nov. 14, 1956	Apr. 27, 1960
June 22, 1960	26th.....	3	Sept. 20, 1960	Sept. 19, 1962
Nov. 15, 1962	27th.....	6	Jan. 15, 1963	Apr. 18, 1966
June 5, 1966	28th.....	1	Dec. 1, 1966	1

¹ Life of Legislature not expired at Dec. 31, 1968.

22.—Twenty-fifth Ministry of Quebec, as at Dec. 31, 1968

(Party standing at latest General Election, June 5, 1966: 56 Union Nationale, 50 Liberal and 2 Independent.)

Office	Name	Date of Appointment
Prime Minister, President of the Executive Council, Minister of Intergovernmental Affairs and Minister of Justice.....	Hon. JEAN-JACQUES BERTRAND.....	Oct. 2, 1968
Minister of Education.....	Hon. JEAN-GUY CARDINAL.....	Oct. 2, 1968
Minister of Finance.....	Hon. PAUL DOZOIS.....	Oct. 2, 1968
Minister of Financial Institutions, Companies and Co-operatives.....	Hon. YVES GABIAS.....	Oct. 10, 1968
Minister of Labour.....	Hon. MAURICE BELLEMARE.....	Oct. 2, 1968
Minister of Revenue.....	Hon. RAYMOND JOHNSTON.....	Oct. 2, 1968
Minister of Transport and Communications.....	Hon. FERNAND LIZOTTE.....	Oct. 2, 1968
Minister of Lands and Forests.....	Hon. CLAUDE GOSSELIN.....	Oct. 2, 1968
Minister of Highways.....	Hon. FERNAND-J. LAFONTAINE.....	Oct. 2, 1968
Minister of Public Works.....	Hon. ARMAND RUSSELL.....	Oct. 2, 1968
Provincial Secretary.....	Hon. RÉMI PAUL.....	Oct. 10, 1968
Minister of Health and Minister of Family and Social Welfare.....	Hon. JEAN-PAUL CLOUTIER.....	Oct. 2, 1968
Minister of Tourism, Fish and Game.....	Hon. GABRIEL LOUBIER.....	Oct. 2, 1968
Minister of Industry and Commerce.....	Hon. JEAN-PAUL BEAUDRY.....	Oct. 2, 1968
Minister of Municipal Affairs.....	Hon. ROBERT LUSSIER.....	Oct. 2, 1968
Minister of Cultural Affairs.....	Hon. JEAN-NOËL TREMBLAY.....	Oct. 2, 1968
Minister of Agriculture and Colonization.....	Hon. CLÉMENT VINCENT.....	Oct. 2, 1968
Minister of Natural Resources.....	Hon. PAUL ALLARD.....	Oct. 2, 1968
Solicitor General.....	Hon. ARMAND MALTAIS.....	Oct. 10, 1968
Ministers without Portfolio:		
Health.....	Hon. ROCH BOIVIN.....	Oct. 2, 1968
Municipal Affairs.....	Hon. FRANCIS BOUDREAU.....	Oct. 2, 1968
Industry and Commerce.....	Hon. EDGAR CHARBONNEAU.....	Oct. 2, 1968
Responsible for the Public Service.....	Hon. MARCEL MASSE.....	Oct. 2, 1968
Responsible for the Eastern Quebec Development Board.....	Hon. MARCEL MASSE.....	Oct. 10, 1968
Family and Social Welfare.....	Hon. FRANÇOIS-EUGÈNE MATHIEU.....	Oct. 2, 1968

Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112; since that date the position has been held by the Hon. Justice John Keiller Mackay, appointed effective Dec. 30, 1957, followed by the Hon. William Earl Rowe, appointed effective May 1, 1963, and the Hon. W. Ross Macdonald, appointed effective July 4, 1968.

The House of Assembly, the single-chamber Legislature of the province, is composed of 117 members elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 112; the Hon. John Parmenter Robarts became Premier on Nov. 8, 1961 upon the resignation of the Hon. Leslie M. Frost, Premier from May 4, 1949.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1960, c. 208 as amended) each member of the Assembly is paid an annual indemnity of \$8,000 and an allowance for expenses at the rate of \$3,000 for every member of the Assembly representing an electoral district within the Municipality of Metropolitan Toronto and \$4,000 for every member representing any other electoral district. In addition, the Speaker receives a special indemnity at the annual rate of \$3,000 and an expense allowance of \$2,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of \$2,000; and the Leader of the Opposition a salary of \$12,000 per annum in addition to his indemnity as a member. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is \$16,000 and for a Cabinet Minister having charge of a department \$12,000. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receive a representation allowance of \$2,000 per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives \$2,500 salary and \$1,000 representation allowance per annum.

23.—Legislatures of Ontario, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79; for 1924-34 in the 1938 edition, p. 114; and for 1935-50 in the 1963-64 edition, p. 87.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Nov. 22, 1951	24th.....	5	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th.....	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th.....	4	Jan. 26, 1960	Aug. 16, 1963
Sept. 25, 1963	27th.....	5	Oct. 29, 1963	Sept. 5, 1967
Oct. 17, 1967	28th.....	1	Feb. 14, 1968	1

¹ Life of Legislature not expired at Dec. 31, 1968.

24.—Seventeenth Ministry of Ontario, as at Dec. 31, 1968

(Party standing at latest General Election, Oct. 17, 1967: 69 Progressive Conservative, 28 Liberal and 20 New Democratic Party.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of the Council.....	HON. JOHN PARMENTER ROBERTS.	Dec. 22, 1958	Nov. 8, 1961
Minister of Public Works.....	HON. THOMAS RAY CONNELL....	Nov. 1, 1956	Apr. 28, 1958
Minister of Health.....	HON. MATTHEW BULLOCH DYMOND	July 18, 1957	Dec. 22, 1958
Minister of Social and Family Services.....	HON. JOHN YAREMKO.....	Apr. 28, 1958	Nov. 24, 1966
Minister of Financial and Commercial Affairs	HON. HENRY LESLIE ROWATREE..	Nov. 21, 1960	Nov. 24, 1966
Minister of Correctional Services.....	HON. ALLAN GROSSMAN.....	Nov. 21, 1960	Aug. 14, 1963
Minister of Agriculture and Food.....	HON. WILLIAM ATCHESON STEWART	Nov. 21 1960	Nov. 8, 1961
Treasurer of Ontario and Minister of Economics.....	HON. CHARLES STEEL MACNAUGHTON.....	Nov. 8, 1961	(Nov. 24, 1966 July 23, 1968)
Minister of Transport.....	HON. IRWIN HASKETT.....	Nov. 8, 1961	Aug. 14, 1963
Minister of Tourism and Information.....	HON. JAMES ALEXANDER CHARLES AULD.....	Oct. 25, 1962	Aug. 14, 1963
Minister of Education and Minister of University Affairs.....	HON. WILLIAM GRENVILLE DAVIS.	Oct. 25, 1962	Oct. 25, 1962
Minister of Energy and Resources Management.....	HON. JOHN RICHARD SIMONETT...	Oct. 25, 1962	Oct. 16, 1963
Minister of Trade and Development.....	HON. STANLEY JOHN RANDALL....	Nov. 8, 1963	Nov. 8, 1963
Minister of Justice and Attorney General....	HON. ARTHUR ALLISON WISHART.	Mar. 26, 1964	Mar. 26, 1964
Minister of Highways.....	HON. GEORGE ELLIS GOMME.....	Jan. 12, 1965	Nov. 24, 1966
Minister of Lands and Forests.....	HON. RENE BRUNELLE.....	Nov. 24, 1966	Nov. 24, 1966
Minister of Labour.....	HON. DALTON ARTHUR BALES....	Nov. 24, 1966	Nov. 24, 1966
Provincial Secretary and Minister of Citizenship.....	HON. ROBERT STANLEY WELCH....	Nov. 24, 1966	Nov. 24, 1966
Minister without Portfolio.....	HON. THOMAS LEONARD WELLS...	Nov. 24, 1966	Nov. 24, 1966
Minister of Municipal Affairs.....	HON. WILLIAM DARCY MCKEROUGH	Nov. 24, 1966	Nov. 23, 1967
Minister without Portfolio.....	HON. FERNAND GUINDON.....	Nov. 23, 1967	Nov. 23, 1967
Minister of Mines.....	HON. ALLAN FREDERICK LAWRENCE	Feb. 13, 1968	Feb. 13, 1968
Minister of Revenue.....	HON. JOHN HOWARD WHITE.....	Oct. 10, 1968	Oct. 10, 1968

Subsection 7.—Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of 12 members and a Legislative Assembly of 57 members elected for a statutory term of five years. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113; since that date, the position has been held by the Hon. Errick F. Willis, sworn in on Jan. 15, 1960, followed by the Hon. Richard S. Bowles, sworn in on Sept. 1, 1965. Premiers since Confederation are listed in the 1960 Year Book, p. 114; the Hon. Dufferin Roblin, who became Premier on June 30, 1958, remained in office until 1967 when the present Premier assumed office.

The Premier of the province is paid a salary of \$16,600 per annum and each of the other members of the Cabinet \$15,600. Members of the Legislature are each paid a sessional indemnity of \$4,800 and a tax-free expense allowance of \$2,400 plus an allowance of \$20 a day for a period of 60 days continuous sitting including Saturdays and Sundays for members outside Metro Winnipeg who have to take board and lodging in Winnipeg during legislative sessions. The Leader of the Opposition is paid \$15,600 and the Speaker of the Legislature receives \$9,600 which is an amount equal to double the indemnity of an individual member.

25.—Legislatures of Manitoba, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80; for 1924-36 in the 1938 edition, p. 115; and for 1937-49 in the 1963-64 edition, p. 88.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 8, 1953	24th.....	5	Feb. 2, 1954	Apr. 30, 1958
June 10, 1958	25th.....	2	Oct. 23, 1958	Mar. 31, 1959
May 14, 1959	26th.....	5	June 9, 1959	Nov. 9, 1962
Dec. 14, 1962	27th.....	5	Feb. 28, 1963	May 18, 1966
June 23, 1966	28th.....	1	Dec. 5, 1966	1

¹ Life of Legislature not expired at Dec. 31, 1968.

26.—Fifteenth Ministry of Manitoba, as at Dec. 31, 1968

(Party standing at latest General Election, June 23, 1966: 31 Progressive Conservative, 14 Liberal, 11 New Democratic Party and 1 Social Credit.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of the Council, Minister of Dominion-Provincial Relations and Minister charged with the administration of the Manitoba Development Authority Act....	Hon. WALTER WEIR.....	Oct. 31, 1961	Nov. 27, 1967
Minister of Finance.....	Hon. GURNEY EVANS.....	June 30, 1958	Sept. 25, 1968
Minister of Transportation.....	Hon. STEWART E. McLEAN.....	June 30, 1958	Sept. 25, 1968
Attorney-General.....	Hon. STERLING R. LYON.....	June 30, 1958	July 22, 1966
Minister of Health and Social Services.....	Hon. GEORGE JOHNSON.....	June 30, 1958	Sept. 25, 1968
Minister of Consumer and Corporate Affairs and Minister of Tourism and Recreation...	Hon. J. B. CARROLL.....	June 30, 1958	Sept. 25, 1968
Minister of Labour.....	Hon. CHARLES H. WITNEY.....	Aug. 7, 1959	Sept. 25, 1968
Minister of Municipal Affairs.....	Hon. OBIE BAILEY.....	Feb. 27, 1963	Sept. 25, 1968
Minister of Government Services.....	Hon. THELMA FORBES.....	July 22, 1966	Sept. 25, 1968
Minister of Industry and Commerce.....	Hon. SIDNEY SPIVAK.....	July 22, 1966	July 22, 1966
Minister of Mines and Natural Resources....	Hon. HARRY J. ENNS.....	July 22, 1966	Sept. 25, 1968
Minister of Youth and Education, Minister under The Legislative Library Act and Minister responsible for The Public Libraries Act.....	Hon. DONALD W. CRAIK.....	Nov. 27, 1967	Sept. 25, 1968
Minister of Agriculture.....	Hon. J. DOUGLAS WATT.....	Sept. 25, 1968	Sept. 25, 1968

Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are cited in the 1960 Year Book, p. 115; since that date the office has been held by the Hon. F. L. Bastedo, commissioned to office Jan. 27, 1968, followed by the Hon. Robert L. Hanbidge, commissioned to office Mar. 1, 1963.

The statutory number of members of the Legislative Assembly is 59, elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 115; the Hon. W. S. Lloyd became Premier in 1961 and the Hon. W. R. Thatcher in 1964.

The Premier receives \$18,500 and each Cabinet Minister \$13,500 annually in addition to a sessional indemnity. The Leader of the Opposition receives \$13,500 plus an office allowance of \$17,500 per annum, the Speaker \$1,500 and the Deputy Speaker \$2,500. The sessional indemnity of a member of the Legislature is \$6,000 together with an expense allowance of \$3,000. Each of the members for the three northernmost constituencies of Prince Albert East-Cumberland, Athabasca and Meadow Lake receives a \$6,000 sessional indemnity and a \$3,500 expense allowance.

27.—Legislatures of Saskatchewan, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81; for 1924-34 in the 1938 edition, p. 116; and for 1935-48 in the 1963-64 edition, p. 89.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 11, 1952	12th.....	4	Feb. 12, 1953	Apr. 25, 1956
June 20, 1956	13th.....	4	Feb. 14, 1957	May 4, 1960
June 8, 1960	14th.....	6	Oct. 11, 1960	Mar. 18, 1964
Apr. 22, 1964	15th.....	4	Feb. 4, 1965	Apr. 1, 1967
Oct. 11, 1967	16th.....	1	Feb. 15, 1968	1

¹ Life of Legislature not expired at Dec. 31, 1968.

28.—Tenth Ministry of Saskatchewan, as at Dec. 31, 1968

(Party standing at latest General Election, Oct. 11, 1967: 35 Liberal and 24 New Democratic Party.)

Office	Name	Date of Appointment
Premier, President of the Executive Council and Minister of Industry and Commerce.....	Hon. W. ROSS THATCHER.....	May 22, 1964 (Dec. 28, 1967)
Provincial Treasurer.....	Hon. D. G. STEUART.....	Dec. 28, 1967
Attorney General and Provincial Secretary.....	Hon. D. V. HEALD.....	May 22, 1964
Minister of Mineral Resources and Minister of Telephones.....	Hon. A. C. CAMERON.....	May 22, 1964 (Dec. 13, 1965)
Minister of Public Health.....	Hon. G. B. GRANT.....	Oct. 18, 1966
Minister of Highways and Transportation.....	Hon. D. BOLDT.....	Oct. 18, 1966
Minister of Agriculture.....	Hon. D. T. McFARLANE.....	July 5, 1965
Minister of Labour and Minister of Co-operation and Co-operative Development.....	Hon. L. P. CODERRE.....	May 22, 1964
Minister of Education.....	Hon. J. C. McISAAC.....	Nov. 3, 1967
Minister of Welfare.....	Hon. C. P. MacDONALD.....	Oct. 18, 1966
Minister of Public Works.....	Hon. A. R. GUY.....	Nov. 3, 1967
Minister of Municipal Affairs.....	Hon. C. L. B. ESTEY.....	Nov. 3, 1967
Minister of Natural Resources.....	Hon. J. ROSS BARRIE.....	Dec. 28, 1967

Subsection 9.—Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are listed in the 1960 Year Book, p. 116; since that date the office has been held by the Hon. J. Percy Page, commissioned to office Dec. 19, 1959, followed by the Hon. J. W. Grant MacEwan, commissioned in January 1966.

There are 65 members in the Legislative Assembly, elected for a maximum period of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 117; the Hon. Ernest C. Manning, the Premier at that time, resigned in 1968.

Each member of the Legislative Assembly (except the Speaker, the Deputy Speaker and the Leader of the Opposition) receives a sessional indemnity of \$1,800 plus \$2,400 expense allowance plus \$15 for each day during the session when the member is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional in-

demnity is \$8,000 plus \$4,000 expense allowance, the Deputy Speaker's sessional indemnity is \$6,400 plus \$3,200 expense allowance, and the Leader of the Opposition's sessional indemnity is \$7,200 plus \$3,600 expense allowance. Each also receives \$15 for each day during the session when he is necessarily absent from his ordinary place of residence. The Premier, in addition to the sessional indemnity, receives \$18,000 and each of the other Ministers receives \$15,000.

29.—Legislatures of Alberta, 1955-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82; for 1924-34 in the 1938 edition, p. 117; and for 1935-48 in the 1963-64 edition, p. 90.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 5, 1952	12th.....	3	Feb. 19, 1953	May 12, 1955
June 29, 1955	13th.....	5	Aug. 17, 1955	May 9, 1959
June 18, 1959	14th.....	5	Feb. 11, 1960	May 9, 1963
June 17, 1963	15th.....	5	Feb. 13, 1964	Apr. 14, 1967
May 23, 1967	16th.....	1	Feb. 15, 1968	1

¹ Life of Legislature not expired at Dec. 31, 1968.

30.—Ninth Ministry of Alberta, as at Dec. 31, 1968

(Party standing at latest General Election, May 23, 1967: 55 Social Credit, 6 Progressive Conservative, 3 Liberal and 1 Independent.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier and President of Council.....	Hon. HARRY E. STROM.....	Oct. 15, 1962	Dec. 12, 1968
Minister of Highways.....	Hon. GORDON E. TAYLOR.....	Dec. 27, 1950	Dec. 12, 1968
Provincial Treasurer.....	Hon. ANDERS O. AALBORG.....	Sept. 9, 1952	Dec. 12, 1968
Minister of Public Works.....	Hon. FREDERICK C. COLBORNE.....	Aug. 2, 1955	Dec. 12, 1968
Minister of Mines and Minerals and Minister of Industry and Tourism.....	Hon. A. RUSSELL PATRICK.....	Aug. 2, 1955	Dec. 12, 1968
Minister of Labour and Minister of Telephones	Hon. RAYMOND REIERSON.....	Aug. 2, 1955	Dec. 12, 1968
Minister of Health.....	Hon. J. DONOVAN ROSS.....	Sept. 18, 1957	Dec. 12, 1968
Provincial Secretary.....	Hon. AMBROSE HOLOWACH.....	Oct. 15, 1962	Dec. 12, 1968
Minister without Portfolio.....	Hon. ETHEL S. WILSON.....	Nov. 30, 1962	Dec. 12, 1968
Minister of Agriculture and Minister of Lands and Forests.....	Hon. HENRY A. RUSTE.....	Feb. 16, 1965	Dec. 12, 1968
Minister without Portfolio.....	Hon. ADOLPH O. FIMRITE.....	July 4, 1966	Dec. 12, 1968
Minister of Youth and Education.....	Hon. ROBERT C. CLARK.....	July 4, 1966	Dec. 12, 1968
Attorney General and Minister of Municipal Affairs.....	Hon. EDGAR H. GERHART.....	June 29, 1967	Dec. 12, 1968
Minister of Public Welfare.....	Hon. RAYMOND A. SPEAKER.....	June 29, 1967	Dec. 12, 1968

Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1871) to 1959 are cited in the 1960 Year Book, p. 118; since that date the position has been held by Maj. Gen. the Hon. George Randolph Pearkes, commissioned to office Oct. 12, 1960, followed by Col. the Hon. J. R. Nicholson, commissioned to office on July 2, 1968.

The Legislative Assembly, elected for a statutory term of five years, has 55 members. Premiers from Confederation to 1959 are cited in the 1960 Year Book, p. 118; the present Premier assumed office in 1952.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of \$5,000 and \$1,500 for expenses. There is also paid to each member

a living allowance of \$1,000 and each member receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. Each member also receives an allowance of \$500 for telegraph and telephone expenses. In addition, the Premier receives a salary of \$20,000, each member of the Executive Council with a portfolio receives \$17,500 annually and each member of the Executive Council without portfolio receives \$6,000. The Leader of the Opposition receives a special allowance of \$7,500 for expenses, the Speaker receives a special allowance of \$7,500, and the Deputy Speaker a special allowance of \$2,500.

31.—Legislatures of British Columbia, 1953-68, as at Dec. 31, 1968

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83; for 1924-37 in the 1938 edition, p. 118; and for 1938-52 in the 1963-64 edition, p. 91.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 9, 1953	24th.....	4	Sept. 15, 1953	Aug. 13, 1956
Sept. 19, 1956	25th.....	4	Feb. 7, 1957	Aug. 3, 1960
Sept. 12, 1960	26th.....	4	Jan. 26, 1961	Aug. 21, 1963
Sept. 30, 1963	27th.....	3	Jan. 23, 1964	Aug. 5, 1966
Sept. 12, 1966	28th.....	1	Jan. 24, 1967	1

¹ Life of Legislature not expired at Dec. 31, 1968.

32.—Twenty-eighth Ministry of British Columbia, as at Dec. 31, 1968

(Party standing at latest General Election, Sept. 12, 1966: 33 Social Credit, 16 New Democratic Party and 6 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment
Premier, President of the Council and Minister of Finance.....	HON. WILLIAM ANDREW CECIL BENNETT.....	Aug. 1, 1952	{Aug. 1, 1952 Feb. 15, 1954
Provincial Secretary and Minister of Highways.....	HON. WESLEY DREWETT BLACK...	Aug. 1, 1952	{Aug. 1, 1952 Apr. 25, 1968
Attorney-General and Minister of Labour...	HON. LESLIE RAYMOND PETERSON.....	Sept. 27, 1956	{Nov. 28, 1960 May 27, 1968
Minister of Lands, Forests, and Water Resources.....	HON. RAY GILLIS WILLISTON.....	Apr. 14, 1954	Mar. 30, 1962
Minister of Agriculture.....	HON. CYRIL MORLEY SHELFORD...	May 27, 1968	May 27, 1968
Minister of Mines and Petroleum Resources and Minister of Commercial Transport...	HON. FRANCIS XAVIER RICHTER...	Nov. 28, 1960	{May 27, 1968 May 27, 1968
Minister of Industrial Development, Trade and Commerce.....	HON. WALDO McTAVISH SKILLINGS	Apr. 25, 1968	Apr. 25, 1968
Minister of Education.....	HON. DONALD LESLIE BROTHERS..	Mar. 20, 1964	May 27, 1968
Minister of Municipal Affairs and Minister of Social Welfare.....	HON. DANIEL ROBERT JOHN CAMPBELL.....	Mar. 20, 1964	{Mar. 20, 1964 Dec. 12, 1966
Minister of Health Services and Hospital Insurance.....	HON. RALPH RAYMOND LOFFMARK	Mar. 20, 1964	Apr. 25, 1968
Minister of Public Works.....	HON. WILLIAM NEELANDS CHANT.	Mar. 15, 1955	Mar. 15, 1955
Minister of Recreation and Conservation and Minister of Travel Industry.....	HON. WILLIAM KENNETH KIERNAN	Aug. 1, 1952	{Mar. 20, 1964 Mar. 23, 1967
Member of the Executive Council without Portfolio.....	HON. ISABEL PEARL DAWSON.....	Dec. 12, 1966	Dec. 12, 1966
Member of the Executive Council without Portfolio.....	HON. PATRICIA JANE JORDAN.....	Dec. 12, 1966	Dec. 12, 1966
Member of the Executive Council without Portfolio.....	HON. GRACE MCCARTHY.....	Dec. 12, 1966	Dec. 12, 1966
Member of the Executive Council without Portfolio.....	HON. PHILIP ARTHUR GAGLARDI..	Aug. 1, 1952	Mar. 21, 1968

Subsection 11.—Yukon Territory and Northwest Territories***Yukon Territory**

The Yukon was established as a separate territory in 1898 to meet a need for local government created by the influx of miners during the gold-rush period. The Yukon Territory Act provided for a Commissioner and a Council of not more than six, all appointed by the Governor in Council. The Commissioner in Council was given legislative powers comparable to those held by the Lieutenant-Governor and the Legislative Assembly of the Northwest Territories. By 1902, five elected councillors had been added and in 1908 a fully elected Council of ten members was introduced. A population decline following the end of the gold rush was accelerated by enlistment during World War I and in 1919 the Council was reduced to three elected members. This remained the level of government until after World War II when population and economic activity again showed an increase, beginning with the building of the Alaska Highway. In 1960, the Council was increased to seven elected members and provision was made for the appointment of an Advisory Committee on Finance.

Basic Legislation.—A principal feature of territorial government is its very close constitutional and working relationship with the Government of Canada. Although the provinces and the Federal Government each have jurisdiction and powers allocated by the British North America Act, the authority of the Territorial Government is allocated only by federal legislation. The Yukon Act prescribes the structure of the executive, legislative and judicial branches of the Territorial Government and the scope of their authority; all residual matters remain under federal control. The Territory has fully representative but not responsible government. The Act has been amended to give increased authority to the Territorial Government and it provides that the number of subjects on which the Territorial Council can legislate may be increased by the Governor in Council. The Yukon Act also provides for the designation of the seat of government; Whitehorse, the single large community in the Territory, was so designated in 1953.

The Government Organization Act, 1966, which describes the responsibilities of the Department of Indian Affairs and Northern Development for the development of Northern Canada, is the other piece of basic legislation under which the Territorial Government operates. The Minister is responsible for the management of the natural resources (except game) and for the development of the North generally. Although he shares authority with the Governor in Council for directing the Commissioner in his duties, he is the effective link between the Territorial and Federal Governments.

The Executive.—The executive side of the Territorial Government is headed by a Commissioner appointed by the Federal Government. He is directed to administer the Government of the Territory under instruction from the Governor in Council or the Minister of Indian Affairs and Northern Development. In practice, the Commissioner is much more responsive to the wishes of his elected Council than the Act implies and he cannot spend any territorial funds which have not been voted by Council. There is also a growing body of other territorial legislation (ordinances) which requires the Commissioner to obtain Council approval for specific actions; actually he never acts on any major issue without consulting Council.

Because the Commissioner does not sit with Council, there is no formal integration of the executive and legislative functions of government at Council sessions. The most recent development toward bridging this gap was the formation of an Advisory Committee on Finance, provided for by the 1960 amendment to the Yukon Act. The Committee consists of three Members of Council appointed by the Commissioner on the advice of Council, with whom the Commissioner is required to consult in the preparation of his estimates of expenditures and appropriations. The Committee accompanies the Com-

* Prepared under the direction of the Deputy Minister, Department of Indian Affairs and Northern Development, Ottawa.

missioner to Ottawa annually for discussion with the Minister of territorial estimates and any other major problems of the moment. By its own choice, Council has made membership on the Committee rotational by replacing one member each year.

The Yukon Act also provides for an Administrator to carry out the functions of the Commissioner in his absence. In practice, this responsibility is carried by an Executive Assistant to the Commissioner, a federal public servant. Below the Commissioner's office, the Territorial Public Service is organized into eight conventional administrative departments under the direction of the Commissioner: all are located in Whitehorse. Territorial Government administration is represented in outlying communities by a limited number of Territorial Agents who are concerned mainly with the sale of liquor and licences but most territorial services are administered from Whitehorse. Health facilities are administered mainly by the federal Department of Health and Welfare. Federal involvement in the operation of health services in the Territory stems from its responsibility for Indians and from practical administrative considerations. All schools are under the direction of the Territorial Department of Education with headquarters in Whitehorse. The Territorial Government has well-developed engineering and welfare services. The Territorial Public Service numbers about 900 persons, including some 200 school teachers and vocational school instructors.

Some administrative areas such as natural resources, which are the responsibility of the Department of Indian Affairs and Northern Development, are administered by federal public servants reporting through the Commissioner who, in addition to his territorial role, is also the Department's senior federal representative in the Territory. Because the Minister of Justice is the Attorney General of the Territory for purposes of the Criminal Code of Canada, the administration of justice in the Territory is still provided, at direct federal expense, by the Department of Justice and the Royal Canadian Mounted Police. In 1967, the Territory started a correctional system which is operated along the lines of a provincial penal service.

The Legislature.—The Legislative Council consists of seven members elected for a term of three years. Three of the members represent electoral districts located in or close to Whitehorse where about half of the some 15,000 residents of the Territory live. As in many other matters, a federal agency (Chief Electoral Officer) conducts the territorial elections as a free service to the Territory. Council normally meets in session twice each year. The first session commences in March and has as a major part of its work the voting of the main territorial estimates which have been prepared by the Commissioner and agreed to by its Advisory Committee on Finance and the Minister. The second session is usually called in November and special sessions can be held at any time. Main sessions last from one to two months and the debates are recorded verbatim and published under the title of Votes and Proceedings. The Commissioner calls Council into session and prorogues it; he sits with it only by invitation to explain or defend a proposed expenditure, draft legislation and policy papers which he has placed before Council. All sessions are presided over by a Speaker who is appointed by Council from among its members for the duration of each Council. The Yukon Act contains only a single oblique reference to the position of Speaker and gives him no specific responsibilities or authority. In practice, he conducts Council proceedings under Rules of Council which are an adaptation of Canadian parliamentary procedures. He sometimes represents Council on formal occasions but Council has not sought to increase the stature of this position, the origin of which is probably related to the large United States element in the Territory during and following the gold-rush period and its predilection for the form of government established in the United States. A Clerk of Council controls the administrative side of its proceedings.

The matters on which Council can legislate are not significantly fewer than those enjoyed by the provinces. The main exceptions concern natural resources. These are a responsibility of the Federal Government which has to provide the heavy investments in

transportation and other facilities needed to bring them into production. Most major policy matters are first placed before Council in the form of a Sessional Paper prepared by the Commissioner, and the draft legislation is then presented at the next session in the form of a Bill, although amendments to existing legislation may be processed concurrently with the Sessional Paper or without the assistance of this background information. Discussion is conducted usually with the Council resolved into Committee of the Whole when the Commissioner, heads of departments and outside specialists appear to give detailed information and advice on particular subjects. Bills are given three readings and require the assent of the Commissioner before they become law as Ordinances of the Territory. The Commissioner can reserve assent to legislation but rarely does so. As with provincial legislation, the Federal Government may disallow any Ordinance but within a longer period of two years. New Ordinances are published after each session, and as Consolidated Ordinances of the Yukon Territory which are usually revised every ten years.

The Judiciary.—Before it was created a Territory in 1898, the Yukon was designated as the Yukon Judicial District. The Yukon Act provides for a Territorial Court which consists of a single judge of superior court rank and one police magistrate. Both are located in Whitehorse. There are 28 justices of the peace, appointed by the Governor in Council, at 13 locations in the Territory. The Judge of the Territorial Court of the Northwest Territories is *ex officio* Judge in the Yukon and vice versa. There is also a Special Court of Appeal consisting of the Chief Justices of British Columbia, the Justices of Appeal of British Columbia and the Judge of the Territorial Court of the Northwest Territories.

The Role of the Federal Government.—Direct federal involvement in the affairs of the Territorial Government extends from control of its constitution to responsibility for the operation of certain provincial-type services and for providing the bulk of its finances. The constitutional arrangement has been described, as have some of the federally operated provincial-type services, e.g., justice and law enforcement and the health services. Beyond these special services, the Federal Government provides the usual range of national services such as the operation of Canadian Broadcasting Corporation radio stations, mail delivery and mainline airports. Full assistance under all national welfare programs is available in the Territory. Even with special financial assistance in many particular areas, the low volume of local revenues falls far short of meeting the high cost of services provided by the Territorial Government. The Federal Government picks up this financial deficit through fiscal arrangements known as Federal-Territorial Financial Agreements. These agreements have a definite term, usually five years, and serve to both allocate the particular functions to be carried out in the Territory by each government and indicate the amount of federal financial assistance the Territorial Government will receive within the life of the agreement. The allocation of responsibility for providing a particular service is usually related to the ability of the Territorial Government to undertake the task. The amount of federal financial assistance given to the Territorial Government is simply the difference between the forecast of revenues available to the Territorial Government and the forecast of the cost of a reasonable level of services to be provided by that Government. In the process, the Territorial Government forgoes its authority to tax private and corporate incomes and to collect other corporation taxes and succession duties.

Setting aside special accounts such as housing loans and amortization of borrowings from the Federal Government for which individual arrangements are made, the Yukon Government in the year ended Mar. 31, 1968, spent nearly \$9,400,000 on operational account and another \$3,246,000 on capital account. Of the total expenditure of approximately \$12,650,000, the Territorial Government raised about \$2,900,000 locally and recovered another \$3,126,000 from the Federal Government via shared-cost programs. The remainder was provided by the Federal Government under its financial agreement with the Territory.

COMMISSIONER, COUNCIL AND COUNCIL STAFF OF THE YUKON TERRITORY
(as at Dec. 31, 1968)

Commissioner.....	J. SMITH
Members of the Council—	
Carmacks-Kluane.....	J. O. LIVESEY
Dawson.....	G. O. SHAW
Mayo.....	Mrs. G. J. GORDON
Watson Lake.....	D. E. TAYLOR
Whitehorse East.....	N. S. CHAMBERLIST
Whitehorse North.....	J. K. MCKINNON
Whitehorse South.....	J. F. DUMAS
Officers of the Council—	
Territorial Secretary and Clerk of the Council.....	H. J. TAYLOR
Legal Adviser.....	P. O'DONOGHUE

Northwest Territories

The Temporary Government Act of 1869 was the first legislation by the Federal Government to establish government in the newly acquired Rupert's Land and North-Western Territory. However, functional territorial government really dates from the North-West Territories Act of 1875. The creation of the Provinces of Saskatchewan and Alberta in 1905 and the adjustment of the northern boundaries of the Provinces of Manitoba, Ontario and Quebec by 1912 pushed the Territories north of the 60th parallel. The 1905 legislation provided for a federally appointed Commissioner with wide executive and legislative powers and a Council of four but no Councillors were appointed for 16 years. In 1921 the Council was expanded to six members and, until 1946 when the first territorial resident was appointed, it was comprised entirely of senior federal officials.

Defence early warning systems, radio and greatly improved air transportation after World War II ended the extreme isolation of the North and pressures for improved territorial government soon followed. The main advances came with legislative changes in 1951 and 1952 when the Council membership was increased to eight, with three of these elected from the Mackenzie District. A fourth was added in 1954. At least two Council sessions were required to be held in a year; one in the Territories and all others at the seat of government in Ottawa. The subjects on which the Commissioner in Council could legislate were increased to approximate those of the provincial legislatures except that natural resources (other than game) were reserved to the Federal Government. A Territorial Court was established.

Recent Constitutional Developments.—The quickening of federal interest in the North in the 1950s, stimulated concern and effort to arrange for a resident territorial government and to chart the course of its future development. The first action was taken in 1963 when it was proposed to divide the Northwest Territories into two territories to allow the residual "Mackenzie Territory" to have a resident administration and to advance more rapidly than the proposed "Nunassiat Territory" in the Eastern Arctic. While the disparity between the physical, economic and social conditions in the two areas was recognized, the draft legislation met strong opposition and the Bills did not survive beyond first reading and committee examination. However, an amendment to the Northwest Territories Act in 1966 created three new electoral districts in the Eastern Arctic and, for the first time, gave elected representation to all residents of the Territories. Also, at the ensuing election the first Eskimo was elected to the Territorial Council. A separate consolidated revenue fund was set up for the Territorial Government and wider powers in other areas of financial administration were introduced.

Meanwhile, in 1965, the Federal Government had appointed an Advisory Commission on the Development of Government in the Northwest Territories which travelled widely in the North to examine into the local needs for change. Following receipt of its recommendations in 1966, the Federal Government acted quickly to provide for a territorial administration resident in the Territories. Yellowknife was designated as the seat of territorial government.

Changes in Territorial Administration.—Unlike the Yukon Territory which has had its own public service since the turn of the century, the Government of the Northwest Territories, until recently, has been largely dependent upon the Federal Government for staff to implement its legislation and to operate its public services. This arrangement was dictated by circumstances as they existed after World War II. The Federal Government had a direct responsibility for the education and welfare of the large Indian and Eskimo populations and for the operation and support of the Territorial Government. Until 1963, the Deputy Minister of Northern Affairs (now Indian Affairs and Northern Development) was Commissioner, and the Northern Administration Branch of that Department was devoted to operating most government services in the Northwest Territories with federal public servants.

In 1963, a full-time Commissioner was appointed and charged with building up a territorial administration located initially in Ottawa but to move into the Territories as soon as possible. A Deputy Commissioner was appointed in 1965 and a territorial staff was gradually built up to administer the territorial finances and to conduct the Council sessions. In September 1967 the Commissioner and his staff of about 50 persons moved to Yellowknife and immediately assumed responsibility for the operation of the liquor system (already staffed by territorial contract employees), for the game management service, for municipal affairs and for the issuing of all licences and the collecting of taxes. Operational responsibility for other government services will be transferred from federal to territorial control as soon as possible; transfer in the Mackenzie District is scheduled for Apr. 1, 1969, and in the Eastern Arctic for Apr. 1, 1970. The Territorial Government is structured to carry out its administration through seven line and three service departments, each under the direction of a senior public servant reporting to the Deputy Commissioner.

Present Government Structure.—The Northwest Territories Act, 1952, as amended, provides for an executive, legislative and judicial structure. The Commissioner is the chief executive officer. He is appointed by the Federal Government and is responsible for the administration of the Territories under the direction of the Minister of Indian Affairs and Northern Development. In practice, all major policy decisions are taken on the advice of this Council. The Commissioner can spend funds only to the extent voted by Council and all new revenue measures are subject to the approval of Council. Normally, the Commissioner obtains prior federal approval of proposed legislative and budgetary measures before submitting them to Council. A Deputy Commissioner is the effective head of the territorial administration.

The Legislative Council of seven elected and five appointed members has a life of three years. It meets at least twice a year, usually for a period of three weeks but more often if required. The Commissioner presides over Council in Session and the Deputy Commissioner sits as an appointed member. A Clerk of Council and a Legal Adviser provide the main administrative assistance and debates are recorded verbatim.

The Northwest Territories Act gives the Territorial Council authority to legislate in most "provincial" areas of government activity except for natural resources (other than game); these are reserved to the Federal Government which alone can provide the necessary development funds. Council is conducted under rules which are an adaptation of federal parliamentary procedure. Legislation (ordinances) must receive three readings and have the assent of the Commissioner; he can reserve assent but this is a rare occurrence and the Federal Government may disallow any ordinance within two years. The Commissioner proposes most legislation but private members' Bills are allowed except for money matters which are the prerogative of the Commissioner. Besides draft legislation, the Council gives considerable time to policy papers in which the Commissioner asks for advice or seeks authority to take a particular course of action.

There is a full system of courts in the Territories, consisting of a territorial court, a police magistrate and numerous justices of the peace to serve the widely scattered settlements. Certain provincial superior courts have concurrent jurisdiction and there is a Court of Appeal which consists of the Justices of Appeal of Alberta and the Judges of the Yukon and the Northwest Territorial Courts. The Minister of Justice is the Attorney General of the Territories under the Criminal Code and the Department of Justice oversees the administration of justice in the Territories. The single Judge of the Territorial Court of the Northwest Territories is located at Yellowknife and goes on circuit to serve the northern and eastern portions of the Territories. The Judge of the Yukon Territorial Court is *ex officio* a judge of the court in the Northwest Territories. Law enforcement is provided by the Royal Canadian Mounted Police.

Continuing Federal Responsibility.—The Government Organization Act, 1966 charges the Minister of Indian Affairs and Northern Development with responsibility for the development of the North and for the general co-ordination of federal activities in the area. His responsibilities for the Territorial Government through the Northwest Territories Act have been described as has the operation of government services by the staff of his Department. Other Federal Government agencies, such as the Northern Health Service of the Department of National Health and Welfare and the Royal Canadian Mounted Police, are responsible for health and police services with the Territorial Government sharing their costs. The Department of Transport operates mainline airports throughout the whole of the North and the Canadian Broadcasting Corporation provides special shortwave northern broadcasts and maintains a growing number of local stations in the Territories. Federal cost-shared national assistance programs, within the competence of the Territorial Government, are available to it on the same conditions as to the provinces.

There are about 6,000 Indians and over 10,000 Eskimos in the Northwest Territories for whom the Federal Government has a special responsibility. Although there are no Indian reserves in the Territories, two treaties were entered into which established certain claims to land and certain other rights. As in the provinces, legislative authority with respect to Indians and lands reserved for Indians is vested exclusively in the Federal Government and this authority extends to Eskimos.

In addition to the many provincial-type services such as health and education operated by the Federal Government and for which the Territory pays in respect of residents other than Indians and Eskimos, it also provides extensive financial assistance to the Territorial Government under special federal-territorial financial agreements which have usually spanned a period of five years. These agreements serve both to allocate the financial responsibility of each government for the provision of services in the Territories and to fix the amount of the federal financial payments to the Territorial Government for the life of the agreement. At this stage of development, territorial revenues fall far short of meeting the expenditures of the Territorial Government. Under the financial agreements, all taxes on personal and corporate incomes, corporation taxes and succession duties are reserved to the Federal Government.

Excluding special accounts such as housing loans and amortization of borrowings for which individual arrangements are made, the Territorial Government, during the year ended Mar. 31, 1968, spent about \$12,500,000 on operating accounts and about \$5,200,000 on capital projects. Of these expenditures, approximately \$4,400,000 was raised within the Territories through taxes, licences and liquor revenues and a further \$2,400,000 was recovered under federal shared-cost programs. The remainder was provided by the Federal Government as special operating grants and loans under the financial agreement and under the special arrangements relating to the move to the Seat of Government; for the latter, the Federal Government provided \$2,950,000 for the two-year period ended Mar. 31, 1969.

COMMISSIONER, COUNCIL AND COUNCIL STAFF OF THE NORTHWEST TERRITORIES
(As at Dec. 31, 1968)

Commissioner	S. M. HODGSON
Deputy Commissioner	J. H. PARKER
Members of the Council—	
Appointed.....	J. H. PARKER HUGH CAMPBELL J. GORDON GIBSON JOHN TETLICH LLOYD BARBER
Elected—	
Mackenzie Delta.....	L. TRIMBLE
Mackenzie River.....	M. D. FAIRBROTHER
Mackenzie South.....	D. M. STEWART
Mackenzie North.....	D. SEARLE
Western Arctic.....	D. PRYDE
Central Arctic.....	R. G. WILLIAMSON
Eastern Arctic.....	SIMONIE
Officers of the Council—	
Clerk.....	W. H. REMNANT
Legal Adviser.....	F. G. SMITH

Section 3.—Local Government*

Local government in Canada comprises all government entities created by the provinces and territories to provide services which they consider are better discharged through control at the local level than through that of the senior governments. Broadly speaking, local government provides protection to persons and property, public works, sanitation and waste removal, health, social welfare, education, recreation and community services for Canadians. In addition, local government, through the medium of government enterprises, may operate such facilities as transit, the supply of electricity and gas, telephone service and the like. Traditionally, the local administration of education has been kept separate from other forms of local government except in the Province of Alberta. The organization and administration of education is dealt with separately in this volume.

Many local government organizations antedate Confederation but under the British North America Act of 1867 local government was made a responsibility of the provincial legislatures, a responsibility subsequently extended to the territories when their governments were constituted in the present forms. The earliest form of local government, apart from the school board, was the municipality. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial or territorial legislatures. Some of these statutes apply to all municipalities within a province or territory, some to a certain type or group, and many to one municipality only.

Rapid and continuing urbanization during the past two decades and the demand for services in rural areas comparable to those obtainable in urban areas have placed great strains on local government. These strains have been aggravated by the inelasticity of the major local revenue source—the taxation of real property; at the same time, the small populations of most municipalities have hindered attempts to provide services that require economies of scale for efficient operation.

The provinces have taken a number of steps to assist local governments to meet these challenges. There has been a proliferation of special agencies, joint boards and commissions to provide certain services or parts of the services for groupings of municipalities. Local government revenue has been supplemented by grants from the provinces, either made unconditionally or for specific purposes. Certain functions traditionally assigned to local government have been resumed in whole or in part by the provinces, the most notable example being the assumption of the responsibility for justice, health, welfare and education by the provincial government in New Brunswick. Besides encouraging the amalgamation

* Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

of small units, the provinces have also established new levels of local government to discharge those functions that provide obvious examples of economies of scale. The establishment of the Municipality of Metropolitan Toronto in 1954 was followed by that of the Metropolitan Corporation of Greater Winnipeg in 1960. In 1967 British Columbia established regional districts to provide local government throughout the entire province for the first time. These regional districts, like the metropolitan governments, are superimposed on existing municipalities and are responsible for supplying services whose efficiency depends upon economies of scale which cannot be achieved by the individual municipalities. A very different program is under way in Newfoundland where the scattered population in the many outports is being encouraged and assisted to move to larger and more viable settlements.

The major local revenue source available to local governments is the taxation of real property, supplemented in varying degrees by taxation of personal property, business, amusement taxes, or sales taxes on specific commodities (see Chapter XXIII, Sect. 2, Subsect. 3). Revenue is also derived from licences, permits, rents, concessions, franchises and fines. A great many municipalities operate enterprises which sometimes provide surplus funds that may become available to help pay for other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of their enterprises.

Since a description of all forms of local government would be too complex for easy comprehension, the following paragraphs describe only municipal organization in each province and in the territories as at Jan. 1, 1968. Table 33, which gives the total number of each type of municipality in each province and territory, shows separately the number of all fully incorporated cities, towns, villages, and county and regional municipalities as well as municipalities in Census Metropolitan Areas. It should be noted that the five "borough" municipalities of Metropolitan Toronto have been included in the count of "cities". Municipalities in Quebec functioning under the name of "Ville de", such as Ville de Québec, Ville de Montréal and Ville de Laval, which are incorporated as cities, have been counted according to their incorporation.

Newfoundland.—The Province of Newfoundland has two cities—St. John's and Corner Brook. A number of the province's many settlements have been organized into 63 towns, four rural districts, 15 local improvement districts and 80 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense. Only about one fifth of 1 p.c. of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Housing.

Prince Edward Island.—In this province, one city and seven towns have been incorporated under special Acts and 22 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province although it is divided into three counties which are subdivided into school sections having elected school boards. The organized municipalities are administered by the Department of Municipal Affairs.

Nova Scotia.—Municipal organization in Nova Scotia covers the whole of the province. The three cities operate under special charters and special legislation. Thirty-nine towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which are regions and are not, in themselves, units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick.—This province, as already noted, was fully reorganized as at Jan. 1, 1967. The municipal organization is now comprised of six cities, 21 towns and 87 villages; in addition, there are local service districts but these are not municipal organizations. The remainder of the province not municipally organized is administered by the Government of New Brunswick; municipalities are administered by the Department of Municipal Affairs.

Quebec.—The more thickly settled areas of Quebec, comprising about one third of the province, are organized into municipal divisions; the remaining two thirds is governed by the province as 'territories'. The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas and having little or no population. There are 302 villages and 1,099 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities and the 66 cities and 184 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

The active functions of the Montreal Metropolitan Corporation are limited mainly to servicing borrowings contracted before Apr. 1, 1961, when the Montreal Metropolitan Boulevard became a provincial responsibility, and to apportioning costs incurred in the area municipalities for streets constructed on each side of the Boulevard.

Ontario.—Slightly more than one tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 38 counties. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders. The municipal organization is comprised of one metropolitan municipality, five boroughs, 33 cities, 152 towns, 155 villages, 562 townships and 18 improvement districts. Some municipalities are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

The Municipality of Metropolitan Toronto, in existence since Jan. 1, 1954, encompasses one city and five boroughs. The Metropolitan Council is composed of the mayor, two senior controllers and the senior alderman of each of the nine wards of the City of Toronto and, for the five boroughs, the mayors, 13 controllers and two aldermen either designated by virtue of office or appointed by local councils. The chairman is elected by the councillors and need not be a councillor of an area municipality. The Council has jurisdiction over assessments, water supply, sewerage works, metropolitan road systems, transit, municipal housing developments, community planning, parks and recreation areas, the Court House, certain health and welfare services, the correlation of educational facilities in the metropolitan area, libraries, garbage disposal sites, low-rental housing, welfare assistance and ambulance service. It also controls a unified metropolitan police force and a metropolitan licensing commission. Expenditures are financed by a levy apportioned among the area municipalities. All borrowing of the area municipalities for capital purposes is done by the Municipality of Metropolitan Toronto.

Manitoba.—Manitoba has nine cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 36 towns, 40 villages and 110 rural municipalities under the

Municipal Act. There are 18 local government districts in settled areas not within municipalities where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

The Metropolitan Corporation of Greater Winnipeg has been in existence since Nov. 1, 1960. Its council is separate and distinct from those of the 16 area municipalities. The councillors are elected as individuals from ten districts, each containing approximately the same number of voters. The council has jurisdiction over planning, zoning, land development, assessments, arterial roads, water supply, sewage disposal, transit and other services. It borrows money only for its own undertakings and leaves to its area municipalities the responsibility for welfare, police, fire protection and other services. Expenditures are financed by a proportion of the business and other taxes levied on industrial or commercial property by the area municipalities and by a uniform levy on the equalized assessment of all taxable real property in the area municipalities.

Saskatchewan.—All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 130 towns, 358 villages and 304 rural municipalities. The area so organized consists of most of the southern two fifths of the province; the remainder of this portion is administered for local purposes by the province in 10 unincorporated local improvement districts. The northern three fifths is sparsely populated and without local government, except for the corporation of Uranium City and District, although some municipal services are provided by the province through operation of the Northern Administration District. For the purpose of this presentation, Uranium City and District is included with the count of towns. Municipalities are supervised by the Department of Municipal Affairs.

Alberta.—The whole Province of Alberta is under some type of municipal organization. The province has an Act applying to each type of municipality and under these Acts the Department of Municipal Affairs supervises the 10 cities, 100 towns, 167 villages, 19 municipal districts and 30 counties; the latter administer schools as well as municipal services. Municipal government for the 46 improvement districts is provided by the Department of Municipal Affairs.

British Columbia.—As already noted, the Government of British Columbia instituted regional government in the province in 1967; as at Jan. 1, 1968, 25 of the proposed 29 regional districts had been established. The province has 31 cities, 13 towns, 56 villages and 40 districts; the latter are mostly rural municipalities although there are some districts adjacent to the principal cities of Victoria and Vancouver that are largely urban in character. It should be emphasized, however, that in British Columbia the application of the name 'city' is somewhat different from the commonly accepted meaning; because of their small size, perhaps one half of the 31 cities would not normally be incorporated as such in another province. Municipalities are supervised by the Department of Municipal Affairs.

In addition to the above types of municipalities, there are unincorporated improvement districts that have been set up to provide certain municipal services such as protection, waterworks, irrigation, etc. These districts are under the supervision of the Department of Lands, Forests, and Water Resources.

Yukon and Northwest Territories.—In the Yukon Territory there are two cities (Whitehorse and Dawson), one local improvement district (Watson Lake), and one unincorporated town (Mayo). In the Northwest Territories there are three towns (Yellowknife, Fort Smith and Hay River) and one village (Inuvik). The settlements of Pine Point and Fort Simpson have limited organization and are not as yet incorporated.

33.—Local and Regional Municipalities by Province or Territory, Specifying the Number in Census Metropolitan Areas,¹ as at Jan. 1, 1968
(CMA = Census Metropolitan Area)

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Total
Local Municipalities													
Cities.....	164	30	66	114	1,051	995	213	803	372	140	3	4	4,485
CMAs.....	2	1	2	6	66	382	9	11	10	31	2	—	179
Other.....	1	—	2	1	34	15 ²	7	2	7	7	—	—	71
			1	5	32	23	2	9	8	24	2	—	108
Towns													
CMAs.....	63	7	39	21	184	152	36	130	100	13	—	3	748
Other.....	1	—	—	1	49	17	1	—	1	1	—	—	71
Villages													
CMAs.....	62	7	39	20	135	135	35	130	99	12	—	3	677
Other.....	—	—	—	87	302	155	40	358	167	56	—	1	1,188
Other¹													
CMAs.....	99	—	—	80	297	146	40	358	167	56	—	1	1,167
Other.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Regional Municipalities													
Metropolitan Corporations (included in CMAs).....	98	—	24	—	1,099	580	128	304	95	40	1	—	2,370
CMAs.....	1	—	—	—	15	22	7	—	—	13	—	—	58
Other.....	—	—	—	—	1,084	558	121	304	95	27	1	—	2,312
Counties (excluded from CMAs)													
Regional Districts.....	—	—	—	—	75	39	1	—	—	25	—	—	140
CMAs.....	—	—	—	—	1	1	1	—	—	—	—	—	3
Other.....	—	—	—	—	74	38	—	—	—	—	—	—	112
Totals, Local and Regional Municipalities													
CMAs.....	164	30	66	114	1,726	964	214	803	372	165	3	4	4,625
Other.....	3	—	2	6	104	64	16	2	3	23	—	—	226
Total	161	30	64	105	1,622	900	198	801	369	142	3	4	4,899

¹ Includes only municipalities wholly within CMAs.

² The five boroughs of Metropolitan Toronto are included with "Cities".

³ See provincial data preceding table.

Section 4.—Federal and Provincial Royal Commissions

Federal Royal Commissions Established.—Royal Commissions established up to June 30, 1967 under Part I of the Federal Inquiries Act are given in previous Year Books beginning with the 1940 edition. There were no such Commissions appointed between that date and Dec. 31, 1968, the closing date of this Chapter. Any Commissions established between the end of 1968 and the date of going to press of this publication will be found in the Register of Official Appointments, Chapter XXVII, Part III.

Reports of Federal Royal Commissions.—Reports of Federal Royal Commissions issued during the period July 1, 1967 to Dec. 31, 1968 were as follows:—

Report of the Royal Commission on Pilotage, established Nov. 1, 1962:

Part I (with Appendices), General Information: study of Canadian pilotage legislation and general recommendations. Ottawa, 1968. 584 p. \$5. (Cat. No. Z1-1962/2-1).

Part II, Study of Canadian pilotage: Pacific Coast and Churchill. Ottawa, 1968. 428 p. \$5. (Cat. No. Z1-1962/2-2).

Report of the Royal Commission on Bilingualism and Biculturalism, established July 19, 1963:

Vol. I, Official languages. Ottawa, 1967. 212 p. \$3. (Cat. No. Z1-1963/1-5/1).

Vol. II, Education. Ottawa, 1968. 350 p. \$4. (Cat. No. Z1-1963/1-5/2).

Provincial Royal Commissions.—The following provincial Royal Commissions were established during the period June 30, 1967 to Dec. 30, 1968:—

<u>Province and Nature of Commission</u>	<u>Chief Commissioner or Chairman</u>	<u>Date Established</u>
NEWFOUNDLAND		
St. Lawrence Mines.....	FINTAN J. AYLWARD.....	1967
Clarenceville Enquiry.....	H.G.R. MEWS.....	1968
Home Construction.....	LEONARD KOSTESZACK.....	1968
PRINCE EDWARD ISLAND		
To inquire into all matters relating to the dairy industry in the Province of Prince Edward Island.....	WILLIAM MURCHIE.....	Aug. 14, 1968
ONTARIO		
To inquire into and report upon pollution in Haldi- mand County.....	W. E. WINEGARD.....	Jan. 11, 1968
To inquire into and report upon continuing the Farm Machinery Advisory Board and that its terms of reference be enlarged and that the function of the Board be to act in an advisory capacity in respect of all aspects of the farm machinery industry in Ontario.....	FRED COHOE-BURGESVILLE.....	Apr. 11, 1968
To inquire into and report upon Magistrate Freder- ick J. Bannon.....	HON. CAMPBELL GRANT.....	June 26, 1968
To inquire into and report upon Magistrate George W. Gardhouse.....	HON. CAMPBELL GRANT.....	June 26, 1968

PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT

Section 1.—Financial Administration*

The financial affairs of the Government of Canada are administered and controlled under the fundamental principles that no tax shall be imposed and no money shall be spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America Act; this Act provides that all federal taxing and appropriating measures must originate in the

* Prepared under the direction of H. R. Balls, Comptroller of the Treasury, in consultation with W. B. Brittain, Assistant Secretary of the Treasury Board, Ottawa.

House of Commons and all requests for grants must come from the Crown through responsible Ministers, and for such requests the Government is solely responsible. In practice, financial control is exercised through a budgetary system based on the principle that all the financial needs of the Government for each fiscal year be considered at one time so that both the current condition and the prospective condition of the public treasury are clearly in evidence.

Estimates and Appropriations.—The co-ordination of the Estimates process is carried out by the Treasury Board. This Board is a separate department of government, its Minister having the designation of President of the Treasury Board. In addition to the President, the Board consists of the Minister of Finance, who serves *ex officio* as a member, and four other Privy Councillors. Under the Financial Administration Act, the Board may act for the Privy Council in all matters relating to financial management including estimates, expenditures, financial commitments, establishments, revenues, accounts, terms and conditions of employment of persons in the public service and general administrative policy in the public service.

The Estimates for any one fiscal year are determined as a result of a two-phased review by the Treasury Board of departmental proposals for expenditure. In the spring of each year, at the request of the Secretary of the Treasury Board, each department submits to the Treasury Board a forecast of Estimates for the current and following four fiscal years. During the summer, a review of the programs giving rise to these Estimates forecasts is carried out by the Treasury Board as a result of which tentative Estimates figures are determined for each department for the coming fiscal year. The Board reviews each departmental program submission in the light of probable revenues and governmental policy generally, usually consulting the appropriate Minister and officials. Each department, using the figure resulting from this review as a guideline, develops in detail its manpower and other resource requirements and submits them to the Treasury Board late in October in the form of Main Estimates for the fiscal year beginning the following Apr. 1. These Estimates are analysed by the Treasury Board staff and compared with the guidelines determined during the spring program review. The Board reviews each departmental submission in the light of the current budgetary outlook. The Estimates may be rejected or reduced and unresolved differences of opinion may be referred to the Cabinet for decision. When the Board is satisfied with their substance and form, the Main Estimates are submitted to the Cabinet and later to the Governor in Council for approval and are then laid before the House of Commons.

On the motion of the President of the Privy Council, the Estimates of each department are initially referred for consideration to the appropriate standing committee of the House on or before Mar. 1. Under the standing orders, the House is deemed to have reported by May 31. The Government House Leader must give 48 hours notice of a motion for the House to concur in the Estimates that have been considered by the committee. The consideration of the Estimates usually extends over a period of several months. Each vote is the subject of a separate resolution and Members of the House may question the Minister on any item but no private Member or Minister on his own responsibility can introduce any new expenditure proposal or any amendment to an Estimates item that would result in an increased expenditure. When the examination of the individual items has been completed, a resolution approving the granting of moneys is referred to a committee of the whole House. When such resolutions are passed, an appropriation Bill is introduced which, when approved by the House of Commons and the Senate, is given Royal Assent and becomes law. Grants in the Appropriation Acts are grants to the Crown and funds cannot be disbursed until the supply voted by Parliament to the Crown is released by a warrant prepared on an Order of the Governor in Council and signed by the Governor General.

As weeks or months may elapse after the commencement of the fiscal year before the main Appropriation Act is passed, funds are made available for the conduct of government functions by the passage of an interim supply Bill granting one or more twelfths of

the total of each item in the Estimates. Additional interim supply Bills may be introduced if required, awaiting Parliament's detailed consideration of the Estimates. In addition, to cover any new and unforeseen requirements that might arise during the year, Supplementary Estimates may be introduced and just prior to the end of the fiscal year further Supplementary Estimates are laid before the House. These Supplementary Estimates are dealt with in the same manner as the Main Estimates.

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt, family allowances and old age assistance payments, which have been authorized under the provisions of other statutes. Although it is not necessary for Parliament to pass annually on these items, they are included in the Main Estimates for purposes of information. Statutory provision also exists for the expenditure of public money in emergencies where no parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, upon the report of the President of the Treasury Board that there is no appropriation for the expenditure and upon the report of the appropriate Minister that the expenditure is urgently required, may order the issuance of a special warrant authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant must be published in the *Canada Gazette* within thirty days of issue and reported to Parliament within fifteen days of assembly. The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the Service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the Estimates for the department or agency concerned.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the Government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the Government holds or administers, including the old age security fund and the Canada Pension Plan fund which are operated as separate entities. Although these disbursements are excluded from the calculation of the annual budgetary surplus or deficit, they are all subject to appropriation by Parliament either in the annual Appropriation Acts or in other legislation.

The Budget.—Some time after the Main Estimates have been introduced, the Minister of Finance presents his annual Budget Speech in the House of Commons. Budget papers, tabled for the information of Parliament at least one day prior to the presentation of the Budget, include a general review of economic conditions and a preliminary review of the Government's accounts for the fiscal year then ending. The Budget Speech itself reviews the state of the national economy and the financial operations of the Government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for Supplementary Estimates and probable lapsings. At the close of his address, the Minister tables the formal resolutions for changes in the existing tax rates and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money Bills. These resolutions give notice of the amendments which the Government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the Speech.

The Budget Speech is delivered in support of a motion that the House go into committee, the debate on which may take up six sitting days. With the passage of the motion, the way is clear for the consideration of the Budget resolutions and, when these have been

approved by the Committee, a report to this effect is made to the House and the tax Bills are introduced and thereafter dealt with in the same manner as all other government financial legislation.

Revenues and Expenditures.—The administrative procedures whereby revenues are collected and expenditures made are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. (Under the Government Organization Act, 1969, the Minister of Supply and Services is the Receiver General of Canada.) The Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. For the actual custody of public money, use is made of the Bank of Canada and the chartered banks. Balances are allocated to the various chartered banks on the basis of a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the Government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund are in excess of requirements for the immediate future they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

The Treasury Board exercises detailed central control over the budgets, programs and staffs of departments and over financial and administrative matters generally. Although the most important part of this control function is exercised during the annual consideration of departmental long-range program plans and the Estimates, the Board maintains continuous control over certain types of expenditure to ensure that the scale of activities and commitments for the future is held within approved policies, that departments follow uniform, efficient and economical practices, and that the Government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure that the decisions of Parliament, the Government and Ministers in regard to expenditures are enforced, the Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except upon the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, and certificates that the work has been performed, the material supplied or the services rendered and that the price charged is reasonable or according to contract, together with such documents as may be required, are presented to the Receiver General, who makes the payment.

At the beginning of each fiscal year each department submits to the Treasury Board a division into allotments of each vote included in its Estimates. Once approved by the Board, these allotments cannot be varied or amended without the approval of the Board and expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, commitments coming in course of payment within the year for which Parliament has provided or has been asked to provide appropriations are recorded and controlled by the departments concerned. (The Minister of Supply

and Services may perform these services on behalf of departments.) Records are maintained of commitments made under contract that will fall due in succeeding years, since the Government must be prepared in future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for thirty days subsequent to Mar. 31 payments may be made and charged to the previous year's appropriations for debts payable prior to the end of that fiscal year.

Under the Financial Administration Act, every payment pursuant to an appropriation is made under the control and direction of the Receiver General by cheque or other instrument in such form and authenticated in such manner as the Treasury Board may direct. In practice, such cheques or instruments are cleared daily by the chartered banks through the Bank of Canada to the Cheque Adjustment Division of the Receiver General, and reimbursement is made by means of a cheque drawn on the Receiver General's account with the Bank of Canada.

Public Debt.—In addition to the collection and disbursement of public money for budgetary and non-budgetary purposes, the Government receives and disburses substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at such rate of interest and subject to such terms and conditions as the Governor in Council may approve. Although the specific authority of Parliament is required for new borrowings, the Financial Administration Act authorizes the Governor in Council to approve the borrowing of such sums of money as are required for the redemption of maturing or called securities and, to ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the Government in the management of the public debt.

Accounts and Financial Statements.—Under the Financial Administration Act, and subject to regulations of the Treasury Board, the Receiver General requires accounts to be kept to show the revenues of Canada, the expenditures made under each appropriation, the other payments into and out of the Consolidated Revenue Fund, and such of the assets and direct and contingent liabilities as the Minister of Finance believes are required to give a true and fair view of the financial position of Canada. The statement of assets and liabilities is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded currently as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of \$1.

Annually, on or before Dec. 31 or, if Parliament is not then sitting, within any of the first fifteen days next thereafter that Parliament is sitting, the *Public Accounts*, prepared by the Receiver General, is laid before the House of Commons by the Minister of Finance. The *Public Accounts* contains a survey of the financial transactions of the fiscal year ended the previous Mar. 31, statements of the revenues and expenditures for that year and of the assets and direct and contingent liabilities as at the end of that year, together with such other accounts and information as are necessary to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public Accounts*. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General.—The Government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit for the purposes of reporting whether the accounts have been faithfully and properly kept and whether the money has been expended for the purposes for which it was appropriated by Parliament and the expenditures have been made as authorized; any audit before payment is the responsibility of the Comptroller of the Treasury. With respect to revenues, the Auditor General is required to ascertain that all public money is fully accounted for and that the rules and procedures applied are sufficient to ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he is required to satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control such property. The Auditor General reports to Parliament the results of his examination, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the Government any matter which in his opinion calls for attention so that remedial action may be taken promptly.

Public Accounts Committee.—It is the usual practice to refer the *Public Accounts* and the *Auditor General's Report* to the Public Accounts Committee of the House of Commons, which may review them and report its findings and recommendations to the House of Commons.

Section 2.—Departments, Boards, Commissions, etc.

The short sketches of the various departments of government and of the special boards and commissions connected with the work of government usually given in this Section of the Year Book are, in this edition, carried in an Appendix. In mid-1968, the Government announced the intended creation of three new departments as well as a major re-organization of several existing departments. At the time this Chapter was in preparation, these changes were under way but not yet consolidated or official. The Appendix and the accompanying organization chart bring the information up to the latest possible date before going to press.

Section 3.—Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purposes and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

THE GOVERNMENT OF CANADA

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation—departmental, agency and proprietary.

Departmental Corporations.—A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. The following departmental corporations are listed in Schedule B to the Financial Administration Act:—

- Agricultural Stabilization Board (formerly Agricultural Prices Support Board)
- Atlantic Development Board
- Atomic Energy Control Board
- Director of Soldier Settlement
- The Director, The Veterans' Land Act
- Dominion Coal Board
- Economic Council of Canada
- Fisheries Prices Support Board
- Municipal Development and Loan Board
- National Gallery of Canada
- National Research Council
- Unemployment Insurance Commission.

Agency Corporations.—An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule C to the Financial Administration Act:—

- Atomic Energy of Canada Limited
- Canadian Arsenal Limited
- Canadian Commercial Corporation
- Canadian Dairy Commission
- Canadian Livestock Feed Board
- Canadian National (West Indies) Steamships Limited (virtually inoperative)
- Canadian Patents and Development Limited
- Centennial Commission
- Crown Assets Disposal Corporation
- Defence Construction (1951) Limited
- National Battlefields Commission
- National Capital Commission (formerly Federal District Commission)
- National Harbours Board
- Northern Canada Power Commission.

* Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation as is also the Eastern Rockies Forest Conservation Board, a joint federal-provincial enterprise. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act; the same situation applies to the Science Council of Canada (assented to May 12, 1966), the Company of Young Canadians (assented to July 11, 1966) and the National Arts Centre Corporation (assented to July 15, 1966). See also the Appendix to this volume.

Proprietary Corporations.—A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act:—

- Air Canada (formerly Trans-Canada Air Lines)
- Canada Deposit Insurance Corporation
- Canadian Broadcasting Corporation
- Canadian Overseas Telecommunication Corporation
- Cape Breton Development Corporation
- Central Mortgage and Housing Corporation
- Eldorado Aviation Limited
- Eldorado Mining and Refining Limited
- Export Credits Insurance Corporation
- Farm Credit Corporation (formerly Canadian Farm Loan Board)
- National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933
- Northern Transportation Company Limited
- Polymer Corporation Limited
- St. Lawrence Seaway Authority
- Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited), subsidiary to the St. Lawrence Seaway Authority.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act, although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establishment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in an Appendix to this volume, following the short sketches of the establishment and functions of the various departments of government, boards, commissions, etc. The reason for this is explained on p. 108.

Section 4.—Acts Administered by Federal Departments*

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

NOTE.—Copies of individual Acts of Parliament may be obtained from the Queen's Printer, Ottawa, at prices of from 15 cents and up, according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered by the Departments given.

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Agriculture—		Consumer and Cor- porate Affairs—	
RSC 1952	4 Agricultural Products Board	concluded	
	5 Agricultural Products Co-operative Marketing	RSC 1952	208 Pension Fund Societies
	6 Agricultural Products Marketing		215 Precious Metals Marking
	9 Animal Contagious Diseases		265 Timber Marking
22, 305	Canada Dairy Products		267 Trade Unions
25, 308	Canada Grain		292 Weights and Measures
47	Cheese and Cheese Factory Im- provement		296 Winding-Up (Pt. I)
52, 313	Cold Storage		314 Combines Investigation
66	Department of Agriculture		315 Currency, Mint and Exchange Fund (Sect. 19)
81	Destructive Insect and Pest	1952-53	49 Trade Marks
101	Experimental Farm Stations	1962	25 Corporations and Labour Union Returns (Pt. 111, Sect. 13)
126	Fruit, Vegetables and Honey	1967-68	16 Department of Consumer and Cor- porate Affairs
141	Hay and Straw Inspection		
155	Inspection and Sale		
167	Live Stock and Live Stock Prod- ucts	Defence	
168	Live Stock Pedigree	Production—	
172	Maple Products Industry	RSC 1952	35 Canadian Commercial Corporation
177	Meat and Canned Foods		62 Defence Production
180	Milk Test		260 Surplus Crown Assets
209	Pest Control Products		
213	Prairie Farm Assistance	Energy, Mines and	
294	Wheat Co-operative Marketing	Resources—	
27	Canada Agricultural Products Standards	RSC 1952	11 Atomic Energy Control
	36 Meat Inspection		26 Canada Lands Surveys (except Pt. III)
1957	27 Fertilizers		34 Canadian Coal Equality
1957-58	22 Agricultural Stabilization		73 Resources and Technical Surveys
1959	35 Seeds		86 Dominion Coal Board
	42 Crop Insurance		95 Emergency Gold Mining Assistance
	43 Farm Credit (amended 1960-61, c. 36, 1962-63, c. 7 and 1964, c. 12)		102 Explosives
	44 Humane Slaughter of Food Ani- mals		173 Coal Production Assistance
1960	14 Feeds	1952-53	21 Canada Water Conservation Assis- tance
1964-65	29 Farm Machinery Syndicates Credit	1955	47 International River Improvements
1966-67	34 Canadian Dairy Commission	1956	10 Northern Ontario Pipe Line Crown Corporation
52	Livestock Feed Assistance	1959	46 National Energy Board
Auditor General—		External Affairs—	
RSC 1952	116 Financial Administration	1911	28 Respecting the International Boundary Waters Treaty and the existence of the International Joint Commission (amended 1914, c. 5, and 1922, c. 43)
Consumer and Cor- porate Affairs—			
1947	24 Trading with the Enemy (Transi- tional Powers)	1948	71 Carrying into effect the Treaties of Peace between Canada and Italy, Rumania, Hungary and Finland
RSC 1952	14 Bankruptcy	1952	50 Carrying into effect the Treaty of Peace between Canada and Japan
	18 Boards of Trade		
	53 Canada Corporations	RSC 1952	68 Department of External Affairs
	51 Companies Creditors Arrangement Act		122 Food and Agriculture Organization of the United Nations
	55 Copyright		142 High Commissioner in the United Kingdom
	94 Electricity Inspection		218 Privileges and Immunities (NATO)
111	Farmers' Creditors Arrangement Act		
	129 Gas Inspection		
150	Industrial Design and Union Label		
191	National Trade Mark and True Labelling		
203	Patent		

* Compiled from information supplied by the respective departments. Certain adjustments will be made in this list, consequent upon the establishment, early in 1969, of several new departments and Crown corporations and the resulting changes in responsibilities of others (see Appendix).

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
External Affairs— concluded		Fisheries— concluded	
RSC 1952 219	Privileges and Immunities (United Nations) (amended by Privileges and Immunities International Organization Act, SC 1965, c. 47)	RSC 1952 69	Department of Fisheries
275	United Nations	119	Fisheries
1953-54 54	Diplomatic Immunities (Commonwealth Countries)	120	Fisheries Prices Support
1964-65 19	Roosevelt Campobello International Park Commission	121	Fisheries Research Board
22	Territorial Sea and Fishing Zones	177	Meat and Canned Foods
		193	Navigable Waters Protection
		194	Northern Pacific Halibut Fishery (Convention)
		244	Salt Fish Board
		293	Whaling Convention
		1952-53 15	Coastal Fisheries Protection
		44	North Pacific Fisheries Convention
Finance—		1953-54 18	Northwest Atlantic Fisheries Convention
	Appropriation (Annual)	1955 34	Great Lakes Fisheries Convention
RSC 1952 13	Canadian National Railways Financing and Guarantee (Annual)	1957 11	Pacific Salmon Fisheries Convention
15	Bank of Canada		
19	Bills of Exchange	31	Pacific Fur Seals Convention
82	Bretton Woods Agreements	1964 22	Territorial Sea and Fishing Zones
	Diplomatic Service (Special) Superannuation	1966-67 18	Fisheries Development
110	Farm Improvement Loans		
116	Financial Administration	Forestry and Rural Development—	
131	Gold Export	1952 175	Maritime Marshland Rehabilitation
151, 326	Industrial Development Bank	RSC 1962 214	Prairie Farm Rehabilitation (amended 1955, c. 39)
156	Interest	1957-58 25	Atlantic Provinces Power Development
182	Municipal Grants	1961 30	Agriculture and Rural Development
183	Municipal Improvements Assistance	1962 10	Atlantic Development Board
204	Pawnbrokers	1963 3	Department of Industry (Pt. II)
221	Provincial Subsidies	1965 12	Area Development Incentives
245	Satisfied Securities	1966 41	Fund for Rural Economic Development
261, 336	Tariff Board		
278	Veterans Business and Professional Loans	Indian Affairs and Northern Development—	
296	Winding-up	1908 57, 58	National Battlefields at Quebec
315	Currency, Mint and Exchange Fund	RSC 1927 87	Seed Grain
1952-53 47	Public Service Superannuation	88	Seed Grain Sureties
1953-54 28	Fire Losses Replacement Account	1932 55	Waterton-Glacier International Peace Park
1955 12	Members of Parliament Retiring Allowances	RSC 1952 26	Canada Lands Surveys (Pt. III)
31	Canadian National Railways Refunding	128	Game Export
46	Fisheries Improvement Loans	149	Indian
1956 1	Prairie Grain Producers Interim Financing	162	Land Titles
2	Temporary Wheat Reserves Arrangements	179	Migratory Birds Convention
29	Federal-Provincial Tax Sharing	189	National Parks
1957-58 26	Beechwood Power Project	192	National Wildlife Week
1959 32	Public Service Pension Adjustment	196	Northern Canada Power Commission
1960 1	Prairie Grain Loans	224	Public Lands Grants
	International Development Association	263	Territorial Lands
1960-61 5	Small Businesses Loans	300	Yukon Placer Mining
1963 13	Municipal Development and Loan	301	Yukon Quartz Mining
1964-65 24	Canada Student Loans	331	Northwest Territories
54	Established Programs Interim Arrangements	1952-53 39	Historic Sites and Monuments
1966-67 70	Canada Deposit Insurance Corporation	53	Yukon
81	Governor General Retiring Annuity		
87	Bank	Industry—	
89	Federal-Provincial Fiscal Arrangements 1967	1960-61 24	National Design Council
93	Quebec Savings Banks	1963 3	Department of Industry
		1965 12	Area Development Incentives
		1966-67 82	Industrial Research and Development Incentives Act
Fisheries—			
RSC 1927 72	Fish Inspection		
RSC 1952 61	Deep Sea Fisheries		

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Insurance—		Manpower and Immigration—	
RSC 1952 31	Canadian and British Insurance Companies	concluded 1955 26	Vocational Rehabilitation of Disabled Persons
49	Civil Service Insurance	1966-67 27	Training Allowance
70	Department of Insurance	96	Adult Occupational Training
100	Excise Tax (Pt. I)		
125	Foreign Insurance Companies	National Defence—	
170	Loan Companies	RSC 1952 184	National Defence
251	Small Loans	1950 21	Canadian Forces Superannuation
272	Trust Companies	1967 23	Visiting Forces
296	Winding-Up (Pt. III)		
1952-53 28	Co-operative Credit Associations		
1966-67 92	Pension Benefits Standards		
Justice—		National Health and Welfare—	
RSC 1940 43	Treachery	RSC 1952 17	Blind Persons
1952 1	Admiralty	29	Canada Shipping (Pt. V, Sick Mariners and Marine Hospitals)
28	Canada Prize	74	Department of National Health and Welfare
71	Department of Justice	109	Family Allowances
97	Escheats	165	Leprosy
98	Exchequer Court	199	Old Age Assistance
106	Expropriation	200	Old Age Security
116	Financial Administration	220	Proprietary or Patent Medicine
127	Fugitive Offenders	229	Public Works Health
144	Identification of Criminals	231	Quarantine
154	Inquiries	1952-53 38	Food and Drugs
158	Interpretation	1953-54 55	Disabled Persons
159	Judges	1956 26	Unemployment Assistance
160	Juvenile Delinquents	1957 28	Hospital Insurance and Diagnostic Services
171	Lord's Day	1958 30	Excise Tax, Sect. 47
193	Official Secrets	1960-61 35	Narcotic Control
210	Petition of Right	59	Fitness and Amateur Sport
234	Railway	1964-65 23	Youth Allowances
259, 335	Supreme Court	51	Canada Pension Plan
266	Tobacco Restraint	54	Established Programs (Interim Arrangements)
299	Yukon Administration of Justice	1966-67 42	Health Resources Fund
307	Canada Evidence	45	Canada Assistance Plan
322	Extradition	64	Medical Care
1952-53 30	Crown Liability		
1953-54 51	Criminal Code		
1960 44	Canadian Bill of Rights		
1960-61 35	Narcotic Control		
1968 24	Divorce		
Labour—		National Library—	
RSC 1927 110	Conciliation and Labour	RSC 1952 330	National Library
RSC 1952 72	Department of Labour		
108	Fair Wages and Hours of Labour	Post Office—	
132	Government Annuities	RSC 1952 212	Post Office
134, 323	Government Employees Compensation		
152	Industrial Relations and Disputes Investigation	Public Archives—	
178	Merchant Seamen Compensation	RSC 1952 163	Laurier House
295	White Phosphorous Matches	222	Public Archives
1952-53 19	Canada Fair Employment Practices		
1955 50	Unemployment Insurance	Public Works—	
1956 38	Female Employees Equal Pay	RSC 1952 91	Dry Docks Subsidies
1964-65 38	Canada Labour (Standards) Code	114	Ferries
1966-67 62	Canada Labour (Safety) Code	135	Government Harbours and Piers (Sect. 5)
		138	Government Works Tolls
		161	Kingsmere Park (in part)
		163	Laurier House
		187	National Harbours Board (Sect. 38, in part)
		216	Prime Minister's Residence
Manpower and Immigration—		223	Public Works
RSC 1952 146	Immigration Aid Societies	234	Railway (Sect. 251)
236	Reinstatement in Civil Employment	269	Trans-Canada Highway
325	Immigration	324	Government Property Traffic (in part)
1955 50	Unemployment Insurance (Sect. 21 Pt. II)	1959 46	National Energy Board (Sect. 78)

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Secretary of State—		Transport—	
RSC 1952 30	Canada Temperance	concluded	
33	Canadian Citizenship (amended 1952-53, c. 23; 1953-54, c. 34; 1956, c. 6; 1958, c. 24; and 1967-68, c. 64)	RSC 1952 187	National Harbours Board
77	Department of State (amended 1966, c. 25)	193	Navigable Waters Protection
270	Translation Bureau	202	Passenger Tickets
1966-67 25	Government Organization	234	Railway (except telecommunications undertakings, facilities system and services)
71	Public Service Employment	242	St. Lawrence Seaway Authority
72	Public Service Staff Relations	268	Trans-Canada Air Lines (Air Canada by 1964, c. 2)
		271	Transport
Solicitor General of Canada—		291	Water Carriage of Goods
RSC 1952 217	Prisons and Reformatories	1953-54 59	Motor Vehicle Transport
241	Royal Canadian Mounted Police Pension Continuation	1955 15	Foreign Aircraft Third Party Damage
1958 38	Parole	29	Canadian National Railways
1959 34	Royal Canadian Mounted Police Superannuation	1960 26	Canadian National Toronto Terminals
54	Royal Canadian Mounted Police	1964 32	Harbour Commissions
1960-61 53	Penitentiary	1966-67 69	National Transportation
Trade and Commerce—		Veterans Affairs—	
RSC 1952 78	Department of Trade and Commerce	1920 54	Returned Soldiers' Insurance (as amended)
103	Export	RSC 1927 188	Soldier Settlement (as amended)
105	Export Credits Insurance	RSC 1952 8	Allied Veterans Benefits
257	Statistics	51, 312	Civilian War Pensions and Allowances (amended 1962, c. 11; 1967, c. 96; 1967-68, c. 8)
1953-54 27	Export and Import Permits		(Secs. I to X, Canadian Pension Commission); (Sect. XI, War Veterans Allowance Board)
Transport—		80	Department of Veterans Affairs (1967, c. 96)
	Auditors for National Railways (Annual)	117	Fire Fighters War Service Benefits
	Canadian National Railways Financing and Guarantee (Annual)	207, 332	Pension (amended 1953-54, c. 62; 1957-58, c. 19; 1960-61, c. 10; 1964-65, c. 34; 1966, c. 55; 1967, c. 96; 1967-68, c. 34) (Canadian Pension Commission)
1907 22	Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund		Special Operators War Service Benefits
1911 26	Toronto Harbour Commissioners	256	Supervisors War Service Benefits
1912 55	Winnipeg and St. Boniface Harbour Commissioners	279, 338	Veterans Insurance (amended 1958, c. 43; 1962, c. 6; 1967, c. 96)
1913 162	Hamilton Harbour Commissioners	280	Veterans' Land (amended 1953-54, c. 66; 1959, c. 37; 1962, c. 29; 1965, c. 19)
1922 50	Trenton Harbour	281	Veterans Rehabilitation (amended 1959, c. 17)
1927 29	Canadian National Steamships	289	War Service Grants (amended 1953-54, c. 46; 1959, c. 18; 1962, c. 7)
1929 12	Canadian National Montreal Terminals	297	Women's Royal Naval Services and the South African Military Nursing Service (Benefits)
1947 42	Port Alberni Harbour Commissioners	340	War Veterans Allowance (amended 1955, c. 13; 1957-58, c. 7; 1960, c. 36; 1960-61, c. 39; 1964-65, c. 34; 1965, c. 20; 1966, c. 55) (War Veterans Allowance Board)
1952 34	Belleville Harbour Commissioners	1952-53 27	Children of War Dead (Education Assistance) (amended 1953-54, c. 2; 1958, c. 25; 1962, c. 10; 1965, c. 15)
RSC 1952 2, 302	Aeronautics	1953-54 65	Veterans Benefit (amended 1955, c. 43)
16	Bills of Lading		
29	Canada Shipping		
39	Canadian National-Canadian Pacific		
43	Canadian Vessel Construction Assistance		
45	Carriage of Goods by Air		
79	Department of Transport		
135	Government Harbours and Piers		
136	Government Railways		
137	Government Vessels Discipline		
169	Live Stock Shipping		
174	Maritime Freight Rates		

PART IV.—FEDERAL AND PROVINCIAL GOVERNMENT EMPLOYMENT

Federal Government Employment

The former Civil Service Commission became the Public Service Commission with the proclamation of the Public Service Employment Act on Mar. 13, 1967. Under this Act the Commission retains its status as an independent body responsible to Parliament for the appointment of qualified persons to or from within the public service and for the operation of staff training and development programs. It may establish boards to consider appeals against selections for appointments made from within the public service, to make recommendations on the delegation of its authority, and to inquire into allegations of political partisanship. The Commission's jurisdiction is extended to include a number of persons not covered by the former Civil Service Act. It is also given the prerogative of making extensive delegation of its authority to deputy heads to perform any of its powers, functions or duties, except those relating to appeals.

Under the amended Financial Administration Act and the Public Service Staff Relations Act, both of which were also proclaimed on Mar. 13, 1967, the Treasury Board is made responsible for the development of regulations, policies and standards governing all other aspects of personnel management in the public service including classification and pay, conditions of employment, collective bargaining and staff relations, organization and establishments, and manpower development and utilization.

Staffing.—The Commission continues to perform its important role as guardian of the merit principle while ensuring the high quality of people within the service. Every citizen has the opportunity of competing for positions in the service of his country. Ordinarily, any Canadian citizen may apply for headquarters positions at Ottawa but applicants for local positions in the administrative support or operational categories who are residents of the locality in which the vacancy occurs are given preference. Competitive examinations are announced through the press and other news media and through posters displayed on public notice boards of the larger post offices, offices of the Canada Manpower Centres, offices of the Public Service Commission and elsewhere.

The Commission's major task—staffing the public service according to merit—is done on an occupational basis. This is consistent with the revised classification system that divides the service into six broad occupational categories which are further divided into groups of occupationally similar jobs. For each major occupation or group of occupations, there is a program of development, recruitment, selection and placement. The activities are operated on the basis of comprehensive manpower planning including regular appraisals of employees, planned rotation, development and continuous recruitment techniques.

The new legislation provides the flexibility needed for the revised approach to government administration whereby competent managers should be allowed to manage and should be held accountable for their decisions. To facilitate staffing under this concept of management, the Commission may delegate any of its authority, except for appeals, to deputy heads wherever practical, and they in turn may delegate this authority with the approval of the Commission. Plans are under way to establish the proper conditions for delegation and to implement the actual delegation of authority. The Commission must report to Parliament on delegation and changes in this delegation.

Staffing operations for the administrative support and operational categories are decentralized to the regional and local levels. But operations remain centralized primarily for employees in executive positions, for most administrative occupations in a number of departments and for specialized or professional employees, so that they may be employed effectively across the service throughout their careers.

Appointments are made from within the service except where the Commission believes it is in the best interests of the service to do otherwise. Selection is made by competition or other processes of personnel selection designed to establish the relative merit of the candidates.

Competitions may be open to the public and to everyone in the public service or they may be limited to all or to a part of the service; the latter are referred to as closed competitions. Examinations for selection may be written, oral, a demonstration of skill or any combination of these. By these techniques, qualified candidates are placed on eligible lists which are valid for periods determined by the Commission. Appointments may be made from an eligible list for positions of a similar occupational nature and level. Closed competitions for promotion are generally conducted by the departmental staffing officers under work-sharing arrangements with the Commission. The Commission remains in touch with the departments to advise and instruct them in the administration of the Public Service Employment Act and its regulations.

Other processes used for appointments include continuous staffing and appraisals. The former is used when there is a recurring demand within an occupational group or there is some specialization within a group. Applications are reviewed and candidates are called for interview. The records of those who are not immediately called or appointed are put into a manpower inventory. This inventory is reviewed when a vacancy occurs and a group of those in the inventory who are best qualified for that position are considered for the appointment. Within the service, employees are regularly appraised to determine what training and development may be needed, to plan careers, and to decide promotions or transfers on the basis of performance and qualifications.

Appeals.—Under the Act, public servants who are candidates in a competition open to all or part of the service may appeal the results of that competition to the Commission, except where no candidate is successful. When a promotion is made without competition, those who would have been eligible to apply if a competition had been held may appeal. Public servants may also appeal a recommendation from a deputy head for their demotion or release because of incompetence or incapacity.

Training and Development.—Consistent with the growing emphasis on managerial development and continuing education, the Commission offers interdepartmental courses in government administration, occupational training and management improvement. The Commission acts as the consultant and adviser to deputy heads on training matters and the training and development facilities of the Commission are available to employees to train them for specific occupations or for promotion within the administrative and managerial ranks.

Language.—The Commission has responsibilities concerning the requirements for bilingualism and biculturalism in the public service. It operates language training schools and carries out research and development to achieve various levels of proficiency needed by public servants. It is developing bilingual skills of senior executives so they may perform their duties effectively in either English or French. The program for this development gives these executives a sufficient appreciation of English and French cultures so they may use this understanding when developing and carrying out policy. The Commission also provides departments and agencies with advice and monitors the way in which language-usage policy is put to use.

Statistics of Federal Government Employment.*—The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. The survey is divided into two main categories: (1) departments and departmental corporations, and (2) agency and proprietary corporations and other agencies. Table 1 combines the two groups; Tables 2 to 5 cover employees in the first category and Table 6 covers employees in the second category.

* Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

1.—Total Federal Government Employees, by Province, as at Mar. 31, 1968, and Payrolls for the Year Ended Mar. 31, 1968

Item and Province or Territory	Departments and Departmental Corporations	Agency Corporations	Proprietary Corporations	Other Agencies	Total
	No.	No.	No.	No.	No.
Employees—					
Newfoundland.....	4,317	10	6,302	8	10,637
Prince Edward Island.....	1,272	2	900	—	2,174
Nova Scotia.....	14,550	272	4,682	53	19,537
New Brunswick.....	7,716	106	6,723	39	14,584
Quebec.....	39,265	2,085	31,996	764	74,110
Ontario.....	103,630	5,847	33,554	1,159	144,190
Manitoba.....	11,380	41	12,792	552	24,765
Saskatchewan.....	8,187	1	3,902	59	12,149
Alberta.....	14,960	50	6,282	100	21,392
British Columbia.....	23,621	233	6,138	148	30,140
Yukon and Northwest Territories ¹ ...	2,542	246	44	—	2,832
Abroad.....	4,072	8	8,755	9	12,844
Totals, Employees.....	235,492	8,901	122,070	2,891	369,354
	\$'000	\$'000	\$'000	\$'000	\$'000
Totals, Payrolls.....	1,356,220	61,117	876,350	45,877	2,339,564

¹ In addition, approximately 130 agency and proprietary corporation and other agency employees are included with those of other provinces.

2.—Employees in Departments and Departmental Corporations of the Federal Government, by Province, as at Mar. 31, 1968

Province or Territory	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
	No.	No.	No.	No.	No.
Newfoundland and Labrador.....	3,290	351	320	3,961	356
Prince Edward Island.....	864	127	102	1,093	179
Nova Scotia.....	9,298	1,929	1,106	12,333	2,197
New Brunswick.....	5,968	775	142	6,885	831
Quebec.....	31,522	3,376	707	35,605	3,660
Ontario.....	87,744	5,362	216	93,322	10,313
Manitoba.....	8,978	1,197	15	10,190	1,190
Saskatchewan.....	6,920	404	—	7,324	858
Alberta.....	11,963	1,148	8	13,119	1,841
British Columbia.....	17,819	1,965	914	20,698	2,923
Yukon and Northwest Territories.....	1,820	312	22	2,154	388
Abroad.....	3,821	—	—	3,821	251
Canada.....	190,007	16,946	3,552	210,505	24,987

Departments and Departmental Corporations.—The salaries of employees in this group are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, although paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departments and departmental corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in the *Estimates of Canada*, or are established by means of supplementary Treasury Board Minutes. Thus, this category of employees includes persons subject to the provisions of the Public Service Employment Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Public Service Employment Act.

"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate regulations and are therefore paid on the basis of standard wage

rates for similar work in the area in which the individual is employed; these employees are subject to the provisions of the Public Service Employment Act. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are principally persons employed on a non-continuing basis.

3.—Employees in Departments and Departmental Corporations and Payrolls, by Month, April 1967 to March 1968

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in Table 6.

Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
EMPLOYEES AT END OF EACH MONTH					
	No.	No.	No.	No.	No.
April 1967.....	182,994	19,610	3,845	206,449	19,754
May.....	183,874	20,266	3,730	207,870	22,328
June.....	184,801	19,982	3,824	208,607	24,757
July.....	—	—	—	—	—
August.....	—	—	—	—	—
September.....	187,278	19,792	4,007	211,077	25,008
October.....	—	—	—	—	—
November.....	—	—	—	—	—
December.....	189,900	18,841	3,311	212,052	18,626
January 1968.....	—	—	—	—	—
February.....	—	—	—	—	—
March.....	190,007	16,946	3,552	210,505	24,987
REGULAR PAYROLLS					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1967.....	90,231	7,215	1,477	98,923	6,395
May.....	90,229	7,093	1,468	98,790	6,415
June.....	91,022	7,578	1,523	100,124	7,592
July.....	—	—	—	—	—
August.....	—	—	—	—	—
September.....	277,249	22,012	4,738	303,999	24,161
October.....	—	—	—	—	—
November.....	—	—	—	—	—
December.....	286,863	19,041	4,249	310,153	16,802
January 1968.....	—	—	—	—	—
February.....	—	—	—	—	—
March.....	291,769	19,305	4,294	315,368	20,436
OVERTIME PAYMENTS REPORTED					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1967.....	3,644	261	473	4,379	80
May.....	1,874	448	154	2,476	82
June.....	2,034	344	252	2,630	95
July.....	—	—	—	—	—
August.....	—	—	—	—	—
September.....	6,006	1,014	845	7,865	508
October.....	—	—	—	—	—
November.....	—	—	—	—	—
December.....	7,257	1,369	997	9,623	549
January 1968.....	—	—	—	—	—
February.....	—	—	—	—	—
March.....	6,019	646	1,213	7,878	273
RETROACTIVE PAYMENTS REPORTED					
	\$'000	\$'000	\$'000	\$'000	\$'000
April 1967.....	144	18	608	769	57
May.....	21	3	.6	30	7
June.....	1	46	25	72	15
July.....	—	—	—	—	—
August.....	—	—	—	—	—
September.....	59	26	3	88	18
October.....	—	—	—	—	—
November.....	—	—	—	—	—
December.....	19	73	1	93	13
January 1968.....	—	—	—	—	—
February.....	—	—	—	—	—
March.....	9,413	10	1	9,423	39

Table 4 presents metropolitan area data on staff employed in departments and departmental corporations. The 19 areas listed include the 16 metropolitan areas defined for purposes of the 1966 Census of population, plus the cities of Calgary, Regina and Saskatoon where the city and metropolitan area boundaries are the same. Included are employees who work within the boundaries of the metropolitan areas; employees residing within those areas but working outside are excluded.

4.—Federal Employees in Metropolitan Areas with Totals for Non-metropolitan Areas, by Sex, as at Sept. 30, 1967, and Payrolls for September 1967

Area	Persons Employed as at Sept. 30, 1967				Regular Payrolls September 1967	
	Male	Female	Total	P.C. of Total	Total	P.C. of Total
	No.	No.	No.		\$'000	
Metropolitan Areas—						
Ottawa, Ont.-Hull, Que.....	35,803	20,499	56,302	23.8	30,228	27.4
Montreal, Que.....	16,765	4,909	21,674	9.2	9,532	8.7
Toronto, Ont.....	12,383	4,758	17,141	7.3	7,692	7.0
Halifax, N.S.....	8,077	1,925	10,002	4.2	4,359	4.0
Vancouver, B.C.....	7,238	2,761	9,999	4.2	4,788	4.3
Winnipeg, Man.....	4,882	2,029	6,911	2.9	3,221	2.9
Edmonton, Alta.....	3,713	1,746	5,459	2.3	2,474	2.2
Victoria, B.C.....	4,183	1,264	5,447	2.3	2,595	2.4
Quebec, Que.....	3,724	1,038	4,762	2.0	2,105	1.9
London, Ont.....	2,744	1,395	4,139	1.8	1,731	1.6
Calgary, Alta.....	2,325	947	3,272	1.4	1,502	1.4
Regina, Sask.....	1,745	525	2,270	1.0	1,095	1.0
St. John's, Nfld.....	1,724	329	2,053	0.9	958	0.9
Saint John, N.B.....	1,215	563	1,778	0.8	776	0.7
Hamilton, Ont.....	1,249	460	1,709	0.7	804	0.7
Saskatoon, Sask.....	1,137	307	1,444	0.6	752	0.7
Windsor, Ont.....	1,015	290	1,305	0.6	602	0.5
Kitchener-Waterloo, Ont.....	597	164	761	0.3	371	0.3
Sudbury, Ont.....	305	154	459	0.2	219	0.2
Non-metropolitan Areas—						
In Canada.....	61,501	13,656	75,157	31.8	32,608	29.6
Outside Canada.....	2,497	1,544	4,041	1.7	1,804	1.6
Totals.....	174,822	61,263	236,085	100.0	110,216	100.0
Proportion in—	p.c.	p.c.	p.c.		p.c.	
Metropolitan areas.....	63.4	75.2	66.5	...	68.8	...
Non-metropolitan areas.....	36.6	24.8	33.5	...	31.2	...
In Canada.....	35.2	22.3	31.8	...	29.6	...
Outside Canada.....	1.4	2.5	1.7	...	1.6	...

Table 5 presents statistics for departments and departmental corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly, an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

This Section previously included a table giving employee and payroll data classified by departmental branches, services and corporations as organized at the end of the latest fiscal year. However, because of the extensive changes taking place in the organization

5.—Departments and Departmental Corporations classified by Function, Persons Employed as at Mar. 31, 1968, and Regular Payrolls for the Year Ended Mar. 31, 1968

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 6.

Function	Salaried			Prevailing Rate			Ships' Officers and Crews			Totals			Casuals and Others		
	Em- ployees	Regular Payrolls	\$	Em- ployees	Regular Payrolls	\$	Em- ployees	Regular Payrolls	\$	Em- ployees	Regular Payrolls	\$	Em- ployees	Regular Payrolls	\$
	No.			No.			No.			No.			No.		
Defence Services (excl. Armed Forces)	28,909	155,604,977		9,241	45,206,689		521	2,571,140		38,671	203,352,816		8,508	31,920,731	
Veterans Pensions and Other Benefits	9,709	51,160,893		1,628	5,301,310		—	—		11,337	56,462,203		543	1,818,090	
General Government	32,967	203,025,998		2,412	10,153,656		33	138,834		35,412	213,318,488		5,362	10,381,031	
Executive and administrative.....	28,423	176,271,073		2,384	10,068,802		33	138,834		30,840	186,478,709		4,269	8,422,430	
Legislative.....	1,403	7,665,891		28	82,739		—	—		1,431	7,748,630		—	26,355	
Research, planning and statistics.....	3,053	18,531,792		..	2,115		—	—		3,053	18,533,907		1,093	1,632,246	
Other.....	88	557,242		..	—		—	—		88	557,242		—	—	
Protection of Persons and Property	16,891	104,953,731		142	561,936		—	—		17,033	105,515,667		1,782	1,449,236	
Law enforcement.....	372	3,007,102		—	—		—	—		372	3,007,102		—	—	
Corrections.....	4,241	22,939,238		—	—		—	—		4,241	22,939,238		13	39,252	
Police protection.....	10,600	67,426,326		142	561,936		—	—		10,742	67,988,262		1,726	1,162,406	
Other.....	1,678	11,581,065		—	—		—	—		1,678	11,581,065		43	247,488	
Transportation and Communications	11,125	74,040,606		1,511	8,702,387		2,533	12,465,280		15,169	95,208,273		1,401	7,810,893	
Airways.....	4,543	32,437,738		924	4,939,305		—	—		5,467	37,367,043		377	2,176,139	
Highways, roads and bridges.....	4,46	280,120		155	1,129,793		—	—		201	1,409,913		117	1,225,772	
Railways.....	2,844	18,616,641		15	87,019		—	—		786,103	786,103		—	7,624	
Telephone, telegraph and wireless.....	2,716	16,362,362		417	2,546,270		2,533	12,465,280		2,859	18,703,660		115	556,064	
Waterways.....	976	5,567,642		—	—		—	—		5,666	31,373,912		781	3,824,921	
Other.....	—	—		—	—		—	—		976	5,567,642		11	19,773	
Health	4,107	24,688,141		331	957,759		—	—		4,438	25,645,900		740	1,748,713	
General.....	1,464	2,783,969		5	14,493		—	—		469	2,798,462		39	206,877	
Public Health.....	1,410	9,868,110		58	213,350		—	—		1,468	10,081,460		69	348,100	
Hospital care.....	2,233	12,036,062		268	729,916		—	—		2,501	12,765,978		632	1,193,736	
Social Welfare	14,563	85,621,663		8	64,933		7	23,404		14,578	85,710,000		2,016	5,917,845	
Aid to unemployed employables.....	4,918	28,284,564		..	8,950		—	—		4,918	28,293,514		666	2,351,962	
Labour.....	6,819	41,938,019		—	—		—	—		6,819	41,938,019		467	1,959,917	
National employment services.....	—	—		—	—		—	—		—	—		—	—	
Other social welfare.....	2,826	15,399,080		8	55,983		7	23,404		2,841	15,478,467		883	1,635,966	
Recreation and Cultural Services	2,646	17,171,829		314	2,475,457		—	—		2,960	19,647,286		299	1,385,656	
Archives, art galleries, museums and libraries.....	705	4,066,370		31	126,029		—	—		736	4,192,399		13	165,442	
Parks, beaches and other recreation areas.....	1,030	6,277,975		283	2,349,428		—	—		1,313	8,627,403		76	66,660	
Other.....	911	6,827,484		—	—		—	—		911	6,827,484		210	1,153,554	

Education	1,762	12,024,615	23	68,698	—	—	1,785	12,103,313	404	620,418
Indian and Eskimo schools and schools in N.W.T.	1,762	12,024,615	23	68,698	—	—	1,785	12,103,313	404	620,418
Universities, colleges and other schools.....	—	—	—	—	—	—	—	—	—	—
Natural Resources and Primary Industries	15,971	112,494,704	1,063	7,491,775	458	2,547,488	17,492	122,533,967	994	7,401,378
Fish and game.....	2,117	13,236,023	95	301,412	458	2,547,488	2,600	18,035,053	191	1,613,921
Forests.....	1,608	17,564,312	84	408,377	—	—	1,690	11,970,689	53	993,238
Land—settlement and agriculture.....	8,504	57,090,754	880	4,208,321	—	—	9,384	62,286,875	441	2,659,442
Minerals and mines.....	1,408	11,805,703	61	343,533	—	—	1,469	12,149,331	112	880,768
Water resources.....	1,500	3,063,494	3	151,434	—	—	609	4,008,068	107	404,733
Other.....	1,737	11,834,328	3	2,131,623	—	—	1,740	14,073,951	20	849,276
Trade and Industrial Development	2,500	18,057,768	189	849,978	—	—	2,689	18,907,746	170	771,023
Public Service and Trading Enterprises	135	602,546	—	—	—	—	135	602,546	26	210,398
Other	48,722	267,906,292	81	403,970	—	—	48,803	268,310,262	2,804	10,934,308
Civil defence.....	163	1,480,405	19	71,821	—	—	212	1,552,225	6	36,195
International co-operation and assistance.....	346	2,516,691	—	—	—	—	346	2,516,691	—	95,875
Immigration and citizenship.....	2,118	12,298,192	16	35,357	—	—	2,134	12,334,549	123	415,804
External affairs.....	2,897	16,508,101	—	—	—	—	2,827	16,308,101	259	442,018
Bullion and coinage.....	288	1,668,408	—	—	—	—	288	1,660,408	81	274,136
Post Office.....	37,317 ¹	190,736,377 ¹	24	174,941	—	—	37,341	190,911,318	1,600 ²	4,866,776 ²
Other.....	5,633	42,806,118	22	121,851	—	—	5,655	43,026,969	645 ²	4,803,444 ²
Grand Totals	190,007 ¹	1,127,363,763 ¹	16,946 ³	82,244,322 ³	3,552 ⁵	17,748,632 ⁵	210,505	1,227,556,717	24,987 ⁶	81,800,799 ⁶

¹ Excludes payments of \$18,528,900 from postal revenues to approximately 8,520 postmasters and assistant postmasters.

² Excludes payments to the Governor General and Lieutenant-Governors for Christmas 1967.

³ Excludes payments of \$71,600 to part-time weather observers.

⁴ Excludes payments to the Prime Minister, Speakers of the Senate and the House of Commons, Deputy Speaker of the House of Commons and Parliamentary Assistants) \$502,500.

⁵ Includes payments of \$5,764 to prevailing rate employees, \$2,486 to ships' employees and \$1,079 to casuals, which amounts are excluded from the function detail to avoid revealing particulars relating to individuals.

⁶ Excludes payments of \$4,578,600 to "helpers".

of a number of departments during 1967-68, this classification does not appear in the current edition; monthly figures on both the functional and departmental bases are available in DBS publication *Federal Government Employment* (Cat. No. 72-004).

Agency and Proprietary Corporations and Other Agencies.—The following organizations owned by the Federal Government as at Mar. 31, 1968 are included under this heading. Employees and earnings are shown by month in Table 6; a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 117.

Agency Corporations

Atomic Energy of Canada Limited
Canadian Arsenals Limited
Centennial Commission
Crown Assets Disposal Corporation
Defence Construction (1951) Limited

National Battlefields Commission
National Capital Commission
National Harbours Board
Northern Canada Power Commission

Proprietary Corporations

Air Canada
Canadian Broadcasting Corporation
Canadian National Railways
Canadian Overseas Telecommunication Corporation
Central Mortgage and Housing Corporation
Eldorado Aviation Limited
Eldorado Nuclear Limited

Export Credits Insurance Corporation
Farm Credit Corporation
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seaway Authority
Seaway International Bridge Corporation Limited

Other Agencies

Atlantic Development Board
Bank of Canada
Canadian Wheat Board

Industrial Development Bank
Canadian Corporation for the 1967 World Exhibition
Office of the Custodian of Enemy Property

6.—Employees and Payrolls in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1967 and 1968

Month	1966-67		1967-68	
	Employees	Payrolls	Employees	Payrolls
	No.	\$'000	No.	\$'000
April.....	137,437	66,444	147,142	79,672
May.....	141,645	71,797	153,256	82,351
June.....	145,242	71,627	159,537	85,680
July.....	149,040	74,385	162,736	87,146
August.....	149,543	68,219	162,272	86,993
September.....	146,084	69,215	159,147	86,629
October.....	143,795	88,174	153,061	87,953
November.....	143,082	74,610	144,170	79,736
December.....	142,368	75,447	138,688	79,354
January.....	143,028	76,439	136,067	76,255
February.....	142,227	74,578	134,307	73,869
March.....	144,292	78,423	133,862	77,707

Provincial Government Employment

Table 7 shows gross payrolls (including retroactive pay, salary adjustments and over-time payments) of provincial government employees, exclusive of those for British Columbia, for the month of March 1968. Provincial government payrolls for the whole of the year ended Mar. 31, 1968 amounted to \$1,687,137,000, payrolls for departmental services employees amounted to \$999,677,000 and accounted for 59.2 p.c. of the total, those of institutions of higher education received \$191,684,000 or 11.4 p.c., those of provincial government enterprises \$475,361,000 or 28.2 p.c., and those of workmen's compensation boards \$20,415,000 or 1.2 p.c.

The only data available for British Columbia and included in the table are for employees of institutions of higher education.

7.—Provincial Government Employment and Payrolls, for March 1968

Province or Territory and Item	Departmental Services	Provincial Institutions of Higher Education	Provincial Government Enterprises	Workmen's Compensation Boards	Total
Newfoundland—					
Employees.....No.	9,012	909	740	58	10,719
Gross payrolls.....\$ '000	3,067	495	284	22	3,868
Prince Edward Island—					
Employees.....No.	2,231	—	65	10	2,306
Gross payrolls.....\$ '000	596	—	19	6	621
Nova Scotia—					
Employees.....No.	13,958	—	4,289	70	18,317
Gross payrolls.....\$ '000	3,560	—	2,384	36	5,980
New Brunswick—					
Employees.....No.	8,218	921	2,226	65	11,430
Gross payrolls.....\$ '000	3,337	483	1,092	31	4,943
Quebec—					
Employees.....No.	50,941	—	20,056	1,199	72,196
Gross payrolls.....\$ '000	21,254	—	11,506	456	33,216
Ontario—					
Employees.....No.	64,782	12,613	23,529	1,663	102,587
Gross payrolls.....\$ '000	39,468	6,481	14,878	839	61,666
Manitoba—					
Employees.....No.	9,857	3,476	7,781	119	21,233
Gross payrolls.....\$ '000	4,465	1,568	3,548	68	9,649
Saskatchewan—					
Employees.....No.	10,918	3,969	6,797	131	21,815
Gross payrolls.....\$ '000	5,553	1,994	3,656	71	11,274
Alberta—					
Employees.....No.	20,714	8,883	8,375	486	38,458
Gross payrolls.....\$ '000	9,723	3,608	3,710	230	17,271
British Columbia—					
Employees.....No.	..	6,748	..	..	..
Gross payrolls.....\$ '000	..	3,038	..	..	..
Yukon and Northwest Territories—					
Employees.....No.	1,018	—	60	—	1,078
Gross payrolls.....\$ '000	529	—	23	—	552
All Provinces and Territories—					
Employees.....No.	191,649	37,519	73,918	3,801	306,887
Gross payrolls.....\$ '000	91,552	17,667	41,100	1,759	152,078

PART V.—CANADA'S EXTERNAL RELATIONS*

Section 1.—Canada's International Status

The growth of Canada's international status is reflected in the development of the Department of External Affairs. From Confederation until 1914, Canada's position in the British Empire was essentially that of a self-governing colony, whose external relations were directed and controlled by the Imperial Government in Great Britain. Canada's first efforts concerning its own external relations, in the early 1900s, merely took the form of creating improved administrative machinery at home. In 1909, Parliament authorized the establishment of a "Department of External Affairs" placing it under the

* Prepared (December 1968) by the Department of External Affairs, Ottawa.

Secretary of State, with an Under-Secretary of State for External Affairs to rank as the permanent deputy head of the Department. The title of the Department indicated that it was to deal with Canada's relations with other governments within the British Empire as well as with foreign powers but its establishment brought no constitutional change. In 1912, the Department was placed directly under the Prime Minister who held the additional portfolio of Secretary of State for External Affairs and this situation obtained until 1946 when the first separate Secretary of State for External Affairs was appointed.

The Department began with a modest staff consisting of the Under-Secretary and six clerks. In 1912 an Assistant Under-Secretary was added, and in 1913 a Legal Adviser. Before the establishment of the Department, a High Commissioner had been appointed to represent Canada in London (from 1880) and an Agent-General in France (from 1882), and Canada, in the closing years of the nineteenth century, was also represented abroad by trade commissioners and immigration officials. However, none of these officials had diplomatic status. Negotiations with foreign countries were conducted through the British Foreign Office and dealings with other parts of the Empire through the Colonial Office, with Canadian representatives frequently included in negotiations. Canadian interests abroad were handled by British diplomatic and consular authorities and all Canadian communications to other governments were made through the Governor General.

The gradual recognition of Canadian autonomy in international affairs and the growth of Canadian responsibilities abroad made expansion of services and representation inevitable. After 1920, it became increasingly apparent that Canada's interests could no longer be conveniently handled by the British diplomatic and consular authorities and the Department began to develop into an agency for the direct administration of Canada's external affairs. In 1921, the Office of the High Commissioner in London was placed under its direct control. In 1925, a Canadian Advisory Officer was appointed in Geneva to represent Canada at various conferences and League of Nations Assemblies and to keep the Canadian Government informed of the activities of the League and of the International Labour Office. In 1926, a Canadian Minister was appointed to Washington.

An advance of the first importance in the Department's development came as a result of an agreement reached at the Imperial Conference of 1926 by which the Governor General ceased to represent the British Government and became solely the personal representative of the Sovereign. This brought about two changes: as the British Government was now without a representative in Canada, it appointed, in 1928, a High Commissioner to represent it at Ottawa; and after July 1, 1927, correspondence from the Dominions Office in London and from foreign governments was directed to the Secretary of State for External Affairs instead of to the Governor General.

In 1928, the former Agent-General in Paris was appointed Minister to France and, in 1929, a legation was opened in Tokyo. At about the same time, the United States, France and Japan opened legations in Ottawa. The expansion of the service was then interrupted by the depression of the 1930s and the next step in the exchange of diplomatic representatives with other countries was taken when Belgium sent a Minister to Ottawa in 1937 and Canada, in 1939, established legations in Belgium and The Netherlands.

With the outbreak of the Second World War, it became imperative that Canada have closer and more direct contact with other governments of the Commonwealth, with the Allied governments and with certain other foreign governments. The day after Canada's separate declaration of war on Sept. 10, 1939, it was announced that the Canadian Government would send High Commissioners to Australia, New Zealand, South Africa and Ireland, and these governments reciprocated. The appointment in 1941 of a High Commissioner to Newfoundland recognized the importance of that country to the defence of Canada. In 1941, by reciprocal agreement, Canada appointed Ministers to the U.S.S.R. and China. During the War, a single Canadian Minister was accredited to a number of Allied governments then functioning in London or Cairo—those of Belgium, The Netherlands, Czechoslovakia, Greece, Norway, Poland and Yugoslavia, and Canada received

Ministers from each of these governments. After the liberation of France, this Minister, following a period in Algiers as representative to the French Committee of National Liberation, moved to Paris with the rank of Ambassador.

Another wartime development was the establishment of diplomatic relations with Latin America. In 1941, Canadian legations were opened in Brazil and the Argentine Republic (the Minister to the latter being also accredited in 1941 to Chile), and these countries sent their first Ministers to Ottawa. Diplomatic representatives were sent to Mexico and Peru in 1944 and to Cuba in 1945. Canada now has diplomatic relations with all countries in Latin America and, because of developing ties with that area, a separate political division devoted to Latin America was set up in the Department in 1960.

Canada's external affairs services continued to expand following the War. Embassies were opened in a number of countries and, after 1947, High Commissioners were accredited to India and Pakistan and subsequently to Jamaica, Malaysia, Nigeria, Sierra Leone, Tanzania, Trinidad and Tobago, Uganda, Kenya and Malta.

Membership in the United Nations has increased Canada's responsibilities outside its own borders and Canada has been represented on various organs of the UN since its formation in San Francisco in 1945. A Permanent Canadian Delegation was established in New York in 1948 and a year later a Canadian office was opened in Geneva, the European headquarters of the organization. These offices, now called Permanent Missions, have since been expanded. Canada was one of the founding members of the North Atlantic Treaty Organization in 1949 and has been active in the Organization throughout the years of its existence. In 1952, on the establishment of a NATO Permanent Council, a Canadian Permanent Delegation was set up in Paris (since moved to Brussels) to represent Canada's NATO interest. There is also in Paris a Canadian Permanent Delegation to the Organization for Economic Co-operation and Development. In addition to representing Canada on these permanent international bodies and their various committees, officials of the Department of External Affairs have been members of Canadian delegations at many international conferences in recent years.

Today, Canada conducts its external relations with some 108 countries. Diplomatic representation abroad and representation of other countries in Canada is given in Section 2 following, and Section 3 reports Canada's main international activities during 1967 and 1968. A brief review of the present functions and organization of the Department of External Affairs is given in the Appendix to this volume; a broader coverage may be found in the monthly bulletin *External Affairs* (Queen's Printer, Ottawa, \$2 per year) and in the Annual Report of the Department.

Section 2.—Diplomatic Representation as at Dec. 31, 1968

NOTE.—Changes in this listing subsequent to Dec. 31, 1968 and names of current representatives are given in *Canadian Representatives Abroad and Representatives of Other Countries in Canada*, published thrice yearly and obtainable from the Queen's Printer, Ottawa, price 60 cents per copy.

1.—Canadian Representation Abroad

Country and Year Representation Established	Present Status of Representative	Address
Afghanistan.....1968	*Ambassador.....	c/o Office of the High Commissioner for Canada, Hotel Shahrazad, Islamabad, West Pakistan, Postal address: P.O. Box 1042, GPO
Algeria.....1965	*Ambassador.....	c/o Canadian Embassy, 88 Kirchenfeld- strasse, Berne, Switzerland
Argentina.....1941	Ambassador.....	Brunetta Bldg., Suipacha and Santa Fé. Postal address: Casilla de Correo 1598, Buenos Aires
Australia.....1939	High Commissioner.....	Commonwealth Ave., Canberra A.C.T., 2600

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Austria.....1952	Ambassador.....	Obere Donaustasse 49-51, 1020 Vienna 2. Postal address: P.O. Box 190, Vienna 1/8
Barbados.....1966	*High Commissioner.....	c/o Office of the High Commissioner for Canada, 72 South Quay, Port-of-Spain, Trinidad. Postal address: P.O. Box 1246
Belgium.....1939	Ambassador.....	35, rue de la Science, Brussels 4
Bolivia.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio El Pacifico- Washington, 7° Piso, Plaza Washing- ton, Lima, Peru. Postal address: Casilla 1212
Brazil.....1941	Ambassador.....	Edificio Metropole, Av. Presidente Wilson 165. Postal address: Caixa Postal 2164- ZC-00, Rio de Janeiro
São Paulo.....	Consul.....	Edificio Scarpa, Av. Paulista 1765-9° andar. Postal address: Caixa Postal 6034
Britain.....1880	High Commissioner.....	Canada House, Trafalgar Sq., S.W.1, London
Bulgaria.....1967	*Ambassador.....	c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia
Burma.....1958	*Ambassador.....	c/o Office of the High Commissioner for Canada, A.I.A. Building, Kuala Lumpur, Malaysia. Postal address: P.O. Box 990
Cambodia (Delegation of Can- ada to the International Commission for Supervision and Control).....1954	Commissioner.....	224 Kéo Chéa, Phnom Penh. Postal address: P.O. Box 184, Phnom Penh
Cameroon.....1962	Ambassador.....	Immeuble Soppo Priso, rue Joseph-Clerc. Postal address: P.O. Box 572, Yaounde
Central African Republic.....1962	*Ambassador.....	c/o Canadian Embassy, Immeuble Soppo Priso, rue Joseph-Clerc, Yaounde, Came- roon. Postal address: P.O. Box 572
Ceylon.....1953	High Commissioner.....	6 Gregory's Road, Cinnamon Gardens. Postal address: P.O. Box 1006, Colombo
Chad.....1962	*Ambassador.....	c/o Canadian Embassy, Immeuble Soppo Priso, rue Joseph-Clerc, Yaounde, Came- roon. Postal address: P.O. Box 572
Chile.....1942	Ambassador.....	Agustinas 1225, 5° Piso. Postal address: Casilla 427, Santiago
Colombia.....1953	Ambassador.....	Carrera 10, 16-92, 8° Piso. Postal address: (air mail) Apartado Aereo 8582; (surface mail) Apartado 1618, Bogota
Congo, Republic of.....1962	*Ambassador.....	c/o Canadian Embassy, Edifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Democratic Republic of the Congo. Postal address: P.O. Box 8341
Congo (Democratic Republic of).....1962	Ambassador.....	Edifice Shell, coin av. Wangata et boul. du 30-juin Kinshasa. Postal address: P.O. Box 8341
Costa Rica.....1961	*Ambassador.....	Edificio Banco Anglo Costarricense, Ave- nida 2 y Calle 3. Postal address: Apartado Postal 4136, San José
Cuba.....1945	Ambassador.....	Calle 30 No. 518, Esquina a7a, Miramar. Postal address: Gaveta 6125, Havana
Cyprus.....1961	*High Commissioner.....	15A Heroes Street, Nicosia. Postal address: P.O. Box 1633, Nicosia
Czechoslovakia.....1943	Ambassador.....	Mickiewiczova 6, Prague 6
Dahomey.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, Niger House, Tinubu Street, Lagos, Nigeria. Postal address: P.O. Box 851
Denmark.....1946	Ambassador.....	Prinsesse Maries Allé 2, Copenhagen V
Dominican Republic.....1954	*Ambassador.....	408 Edificio Copello, 79 Calle El Conde. Postal address: Apartado 1393, Santo Domingo
Ecuador.....1961	*Ambassador.....	Edificio Sud America, Calle Santa Prisca 120, 3° Piso. Postal address: Casilla 2245, Quito
El Salvador.....1962	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida 2 y Calle 3, San José, Costa Rica. Postal address: Apartado Postal 4136

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Ethiopia.....1966	Ambassador.....	African Solidarity Insurance Building, Haile Selassie 1 Square. Postal address: P.O. Box 1130, Addis Ababa
European Communities (The European Economic Com- munity, The European Atom- ic Energy Community, The European Coal and Steel Community).....1960	Head of Mission.....	35, rue de la Science, Brussels 4
Finland.....1949	Ambassador.....	Pohjois Esplanadikatu 25B, Helsinki
France.....1928	Ambassador.....	35, avenue Montaigne, Paris viii*
Bordeaux.....	Consul General.....	15 bis, allée de Chartres, 33-Bordeaux. Postal address: Canadian Consulate General, Bordeaux
Marseille.....	Consul General.....	Canadian Consulate General, 24, avenue du Prado, Marseille (6*), Bouches-du-Rhône
Gabon.....1962	*Ambassador.....	c/o Canadian Embassy, Immeuble Soppo Priso, rue Joseph-Clerc, Yaounde, Federal Republic of Cameroon. Postal address: P.O. Box 572
Gambia.....1966	*High Commissioner.....	c/o Canadian Embassy, 45, av. de la Répu- blique, Dakar, Sénégal. Postal address: B.P. 3373
Germany.....1950	Ambassador.....	Zitellmannstrasse 22, Bonn
Duesseldorf.....	Consul General.....	4 Duesseldorf 1, Koenigsallee 82, Duesseldorf
Hamburg.....	Consul General.....	Esplanade 41-47, 2000 Hamburg 36
Berlin.....	Head of Mission.....	Perthshire Block, Olympic Stadium, British Headquarters, Berlin 19 (British Sector). Postal address: Canadian Military Mis- sion, Berlin, B.F.P.O. 45 via U.K.
Ghana.....1957	High Commissioner.....	E 115-3 Independence Avenue. Postal ad- dress: P.O. Box 1639, Accra
Greece.....1943	Ambassador.....	31, Avenue Vassilissis Sofias, Athens 138
Guatemala.....1961	*Ambassador.....	5a Avenida 11-70, Zona 1, Guatemala City. Postal address: (air mail) Apartado Aero 400; (surface mail) Apartado 444
Guinea.....1962	*Ambassador.....	c/o Canadian Embassy, 45 av. de la Répu- blique, Dakar, Sénégal. Postal address: B.P. 3373
Guyana.....1964	High Commissioner.....	Bank of Guyana Bldg., Main and High Streets. Postal address: P.O. Box 660, Georgetown
Haiti.....1954	Ambassador.....	Camille-Léon St. at des Marguerites St. Postal address: C.P. 826, Port-au-Prince
Honduras.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco An- glo Costarricense, Avenida 2 y Calle 3, San José, Costa Rica. Postal address: Aparta- do Postal 4136
Hong Kong.....1946	Senior Trade Commissioner....	P & O Bldg., 21-23 Des Voeux Road Central. Postal address: P.O. Box 126, Victoria
Hungary.....1965	*Ambassador.....	c/o Canadian Embassy, Mickiewiczova 6, Prague 6, Czechoslovakia
Iceland.....1949	*Ambassador.....	c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway
India.....1947	High Commissioner.....	4 Aurangzeb Road. Postal address: P.O. Box 114, New Delhi 11
Indonesia.....1953	Ambassador.....	Djalan Budi Kemuliaan No. 6, Djakarta
Iran.....1955	Ambassador.....	Bezrouke House, corner of Takhte Djam- chid Avenue and Forsat Street. Postal address: P.O. Box 1610, Tehran
Iraq.....1961	*Ambassador.....	c/o Canadian Embassy, P.O. Box 1610, Teh- ran, Iran
Ireland.....1940	Ambassador.....	10 Clyde Road, Ballsbridge, Dublin 4
Israel.....1953	Ambassador.....	84 Hahashmonaim Street, Tel Aviv
Italy.....1947	Ambassador.....	Via G.B. de Rossi 27; 00161 Rome
Milan.....	Consul General.....	Postal address: Via Vittori Pisani, 19; 20124 Milan
Ivory Coast.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115-3 Independence Avenue, Accra, Ghana. Postal address: P.O. Box 1639

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Jamaica.....1962	High Commissioner.....	Dominion Life Bldg., Tobago Road, Corner Trafalgar Rd. and Knutsford Blvd. Postal address: P.O. Box 1500, Kingston 10
Japan.....1929	Ambassador.....	Embassy of Canada, Akasaka Post Office, Tokyo
Jordan.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clemenceau, Beirut, Lebanon. Postal address: C. P. 2300
Kenya.....1965	High Commissioner.....	Industrial Promotion Services Bldg., Kima- thi Street. Postal address: P.O. Box 30481, Nairobi
Korea.....1964	*Ambassador.....	c/o Embassy of Canada, Akasaka Post Office, Tokyo, Japan
Kuwait.....1965	*Ambassador.....	c/o Canadian Embassy, Bezrouke House, corner of Takhte Djamchid Ave. and For- sat St., Tehran, Iran. Postal address: P.O. Box 1610
Lacs (Delegation of Canada to the International Com- mission for Supervision and Control).....1954	Commissioner.....	Rue Tat Luang. Postal address: P.O. Box 389, Vientiane
Lebanon.....1954	Ambassador.....	Immeuble Alpha, rue Clemenceau. Postal address: C.P. 2300, Beirut
Lesotho.....1968	*High Commissioner.....	c/o Canadian Embassy, Standard General Bldg., 238 Vermeulen St., Pretoria, South Africa. Postal address: P.O. Box 2181
Libya.....1968	Ambassador.....	c/o Canadian Embassy, 3 rue Didon, Notre- Dame de Tunis, Tunisia. Postal address: P.O. Box 606
Luxembourg.....1945	*Ambassador.....	c/o Canadian Embassy, 35 rue de la Science, Brussels
Malagasy Republic.....1967	*Ambassador.....	c/o Canadian Embassy, African Solidarity Insurance Bldg., Haile Selassie 1 Square, Addis Ababa, Ethiopia. Postal address: P.O. Box 1130
Malaysia.....1958	High Commissioner.....	American International Assurance Bldg., Ampang Road. Postal address: P.O. Box 990, Kuala Lumpur
Malta.....1964	*High Commissioner.....	c/o Canadian Embassy, Via G.B. de Rossi 27, 00161 Rome, Italy
Mexico.....1944	Ambassador.....	Melchor Ocampo 463-7. Postal address: Apartado 5364, Mexico 5, D.F.
Monaco.....1967	*Consul General.....	c/o Canadian Consulate General, 24 ave. du Prado, Marseille (6*), Bouche-du-Rhône
Morocco.....1962	*Ambassador.....	c/o Canadian Embassy, Edificio España, Plaza de España 2, Madrid, Spain. Postal address: Apartado 587
Nepal.....1965	*Ambassador.....	c/o Canadian High Commissioner's Office, 4 Aurangzeb Road, New Delhi, India. Postal address: P.O. Box 114
Netherlands.....1939	Ambassador.....	5 and 7 Sophialaan, The Hague
New Zealand.....1940	High Commissioner.....	I.C.I. Building, Molesworth Street, N.I. Postal address: P.O. Box 12-049, Wellin- gton North
Nicaragua.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense Avenida 2 y Calle 3, San José, Costa Rica. Postal address: Apartado Postal 4136
Niger.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, Niger House, Tinubu St., Lagos, Nigeria. Postal Address: P.O. Box 851
Nigeria.....1960	High Commissioner.....	Niger House, Tinubu Street. Postal ad- dress: P.O. Box 851, Lagos
North Atlantic Council (Dele- gation of Canada).....1952	Permanent Representative and Ambassador.....	Brussels 39, Belgium
Norway.....1943	Ambassador.....	Fridtjof Nansens Plass 5, Oslo
Organization for Economic Co-operation and Develop- ment (The Permanent Dele- gation of Canada).....1961	Permanent Representative.....	1, rue de Chané, Paris XVI*

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—continued

Country and Year Representation Established	Present Status of Representative	Address
Pakistan.....1950	High Commissioner.....	Hotel Shahrazad, Islamabad, West Pakistan. Postal address: P.O. 1042, G.P.O., Islamabad
Panama.....1961	*Ambassador.....	c/o Canadian Embassy, Edificio Banco Anglo Costarricense Avenida 2 y Calle 3, San José, Costa Rica. Postal address: Apartado Postal 4136
Paraguay.....1962	*Ambassador.....	c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina. Postal address: Casilla de Correo 1598
Peru.....1944	Ambassador.....	Edificio El Pacifico-Washington, 7° Piso, Plaza Washington. Postal address: Casilla 1212, Lima
Philippines.....1949	Consul General.....	1414 Roxas Blvd., Manila. Postal address: P.O. Box 1825
Poland.....1943	Ambassador.....	Ulica Katowicka 31, Saska Kępa, Warsaw
Portugal.....1952	Ambassador.....	Rua Rosa Araujo 2, Lisbon 2
Romania.....1968	*Ambassador.....	c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia
Rwanda.....1967	*Ambassador.....	c/o Canadian Embassy, Edifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Congo. Postal address: P.O. Box 8341
San Marino.....1968	*Consul.....	c/o Canadian Embassy, Via G.B. de Rossi 27, 00161 Rome, Italy
Senegal.....1962	Ambassador.....	45, avenue de la République. Postal address: P.O. Box 3373, Dakar
Sierra Leone.....1961	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Niger House, Tinubu Street, Lagos, Nigeria. Postal address: P.O. Box 851
Singapore.....1966	High Commissioner.....	International Building, 360 Orchard Road, Postal address: P.O. Box 845, Singapore
Somali Republic.....1968	*Ambassador.....	c/o Canadian Embassy, African Solidarity Insurance Building, Haile Selassie 1 Square, Addis Ababa, Ethiopia. Postal address: P.O. Box 1130
South Africa.....1940	Ambassador.....	Standard General Bldg., 238 Vermeulen St. Postal address: P.O. Box 2181, Pretoria
Spain.....1953	Ambassador.....	Edificio España, Plaza de España 2. Postal address: Apartado 587, Madrid
Sudan.....1961	*Ambassador.....	c/o Canadian Embassy, 8 Sharia Mohamed Fahmi el Sayed, Garden City, Cairo, U.A.R. Postal address: Kasr el Doubara Post Office
Sweden.....1947	Ambassador.....	Kungsgatan 24, Stockholm C. Postal address: P.O. Box 14042, S-104 40 Stockholm 14
Switzerland.....1947	Ambassador.....	88 Kirchenfeldstrasse, Berne
Syrian Arab Republic.....1965	*Ambassador.....	c/o Canadian Embassy, Immeuble Alpha, rue Clémenceau, Beirut, Lebanon. Postal address: C.F. 2300
Tanzania, United Republic of.....1962 (1964)	High Commissioner	Gailey and Roberts Bldg., Independence Ave. Postal address: P.O. Box 1022, Dar-es-Salaam
Thailand.....1961	Ambassador.....	Thai Farmers Bank Bldg., 142 Silom Road, Bangkok
Togo.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada, E 115-3 Independence Ave., Accra, Ghana. Postal address: P.O. Box 1639
Trinidad and Tobago.....1962	High Commissioner.....	72 South Quay, Port-of-Spain, Trinidad. Postal address: P.O. Box 1246
Tunisia.....1961	Ambassador.....	3, rue Didon, Notre-Dame de Tunis. Postal address: P.O. Box 606, Tunis R.P.
Turkey.....1947	Ambassador.....	Vali Dr. Resit, Cadessi 52, Cankaya, Ankara
Uganda.....1962	*High Commissioner.....	c/o Office of the High Commissioner for Canada, Industrial Promotion Services Bldg., Kimathi Street, Nairobi, Kenya
Union of Soviet Socialist Republics.....1943	Ambassador.....	23 Starokonyushenny Pereulok, Moscow
United Arab Republic.....1964	Ambassador.....	6 Sharia Mohamed Fahmi el Sayed, Garden City. Postal address: Kasr el Doubara Post Office, Cairo

* Dual accreditation; representative not resident in the country.

1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
United Nations (The Permanent Mission of Canada to the United Nations).....1948	Permanent Representative and Ambassador.....	866 United Nations Plaza, New York, N.Y. 10017
(The Permanent Mission of Canada to the Office of the United Nations at Gene- va).....1948	Permanent Representative and Ambassador.....	16, Parc du Château Banquet, Geneva, Switzerland
(Canadian Delegation to the Conference of the Eight- een-Nation Committee on Disarmament).....1962	Ambassador and Adviser to the Government on Disarmament	2, Parc du Château Banquet, Geneva, Switzerland
(Permanent Delegation of Canada to the United Na- tions Educational, Scien- tific, and Cultural Orga- nization).....1960	Minister and Permanent Dele- gate.....	1, rue Chanex, Paris XVI*
United States of America.....1927	Ambassador.....	1746, Massachusetts Avenue, N.W. Wash- ington, D.C. 20036
Boston.....	Consul General.....	500 Boylston St., Boston, Mass. 02116
Chicago.....	Consul General.....	310 South Michigan Ave., Chicago, Ill. 60604
Cleveland.....	Consul.....	Illuminating Bldg., 55 Public Square, Cleveland, Ohio 44113
Dallas.....	Consul and Trade Commis- sioner.....	2100 Adolphus Towers Bldg., 1412 Main St., Dallas, Texas 75202
Detroit.....	Consul.....	1920 First Federal Bldg., 1001 Woodward Ave., Detroit, Mich. 48226
Los Angeles.....	Consul General.....	510 West Sixth St., Los Angeles 14, Cal. 90014
New Orleans.....	Consul General.....	International Trade Mart, 2 Canal St., New Orleans, La. 70130
New York.....	Consul General.....	680 Fifth Ave., New York 19, N.Y. 10019
Philadelphia.....	Consul and Trade Commis- sioner.....	Penn Center Plaza, Philadelphia 2, Pa. 19102
San Francisco.....	Consul General.....	1 Maritime Plaza, Golden Gateway Center, San Francisco, Cal. 94111
Seattle.....	Consul General.....	1308 Tower Bldg., Seventh Avenue and Olive Way, Seattle, Wash. 98101
Upper Volta.....1962	*Ambassador.....	c/o Office of the High Commissioner for Canada: E 115/3 Independence Avenue, Accra, Ghana. Postal address: P.O. Box 1639
Uruguay.....1952	*Ambassador.....	1005 Calle Prudencio Vasquez Y Vega. Postal address: Casilla Posta 852, Monte- video
Venezuela.....1952	Ambassador.....	Avenida La Estancia No. 10, 14° Piso. Ciudad Comercial Tamanaco. Postal address: Apartado del Este 11452, Caracas
Viet-Nam (Delegation of Cana- da to the International Com- mission for Supervision and Control).....1954	Commissioner.....	Cap Vo Tanh. Postal address: P.O. Box 220, Saigon
West Indies (Associated States).....1967	Commissioner.....	c/o Office of the High Commissioner for Canada, 72 South Quay, Port-of-Spain, Trinidad. Postal address: P.O. Box 1246
Yugoslavia.....1943	Ambassador.....	Proleterskih Brigada 69, Belgrade
Zambia (Republic of).....1966	*High Commissioner	c/o Office of the High Commissioner for Canada, Gailley and Roberts Bldg., Independence Ave., Dar-es-Salaam, Tan- zania. Postal address: P.O. Box 1022

* Dual accreditation: representative not resident in the country.

2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
Algeria.....1964	Chargé d'Affaires.....	200 Rideau Terrace, Ottawa
Argentina.....1941	Ambassador.....	211 Stewart St., Ottawa
Australia.....1940	High Commissioner.....	90 Sparks St., Ottawa
Austria.....1952	Ambassador.....	445 Wilbrod St., Ottawa
Barbados.....1967	High Commissioner.....	151 Slater St., Ottawa
Belgium.....1937	Ambassador.....	85 Range Rd., Ottawa
Bolivia.....1961	Ambassador.....	c/o Embassy of Bolivia, 1145 19th St., Washington, D.C. 20036, U.S.A.
Botswana.....1968	Acting High Commissioner.....	c/o Embassy of the Republic of Botswana, 1701 New Hampshire Ave. N.W., Wash- ington, D.C. 20009, U.S.A.
Brazil.....1941	Ambassador.....	450 Wilbrod St., Ottawa
Britain.....1928	High Commissioner.....	80 Elgin St., Ottawa
Bulgaria.....1968	Ambassador.....	325 Stewart St., Ottawa
Burma.....1958	Chargé d'Affaires <i>ad interim</i>	116 Albert St., Ottawa
Burundi.....	Ambassador.....	c/o Permanent Mission of Burundi to the United Nations, New York, N.Y., U.S.A.
Cameroon.....1962	Ambassador.....	85 Range Rd., Ottawa
Caribbean Commission (Eastern).....	Commissioner.....	14 Frontenac St., Place Bonaventure, Montreal 3, Que.
Ceylon.....1957	High Commissioner.....	85 Range Rd., Ottawa
Chile.....1942	Ambassador.....	56 Sparks St., Ottawa
China.....1942	Ambassador.....	54 Range Rd., Ottawa
Colombia.....1953	Ambassador.....	140 Wellington St., Ottawa
Congo, Democratic Republic of the.....1965	Ambassador.....	18 Range Rd., Ottawa
Congo, Republic of.....1968	Ambassador.....	c/o Permanent Mission of the Republic of the Congo (Brazzaville) to the United Nations, 444 Madison Ave., New York, N.Y.
Costa Rica.....1963	Ambassador.....	c/o Embassy of Costa Rica, 2112 S St. N.W., Washington, D.C. 20008, U.S.A.
Cuba.....1945	Ambassador.....	330 Chapel St., Ottawa
Cyprus.....1964	High Commissioner.....	c/o Embassy of Cyprus, 2211 R St. N.W., Washington, D.C. 20008, U.S.A.
Czechoslovakia.....1942	Ambassador.....	171 Clemow Ave., Ottawa
Dahomey.....1964	Ambassador.....	c/o Embassy of Dahomey, 2737 Cathedral Ave. N.W., Washington, D.C. 20008, U.S.A.
Denmark.....1946	Ambassador.....	85 Range Rd., Ottawa
Dominican Republic.....1954	Chargé d'Affaires <i>ad interim</i>	200 Rideau Terrace, Ottawa
Ecuador.....1961	Chargé d'Affaires <i>ad interim</i>	56 Sparks St., Ottawa
El Salvador.....1962	Ambassador.....	c/o Embassy of El Salvador, 2308 Cali- fornia St. N.W., Washington, D.C. 20008, U.S.A.
Estonia.....	Acting Consul.....	160 Highbourne Rd., Toronto 7, Ont.
Ethiopia.....1968	Ambassador.....	90 Sparks St., Ottawa
Finland.....1948	Ambassador.....	85 Range Rd., Ottawa
France.....1928	Ambassador.....	42 Sussex Dr., Ottawa
Gabon.....1962	Ambassador.....	c/o Embassy of Gabon, 4900-16th St. N.W., Washington, D.C. 20011, U.S.A.
Germany.....1951	Ambassador.....	1 Waverley St., Ottawa
Ghana.....1961	High Commissioner.....	85 Range Rd., Ottawa
Greece.....1942	Ambassador.....	Chateau Laurier Hotel, Ottawa
Guatemala.....1961	Ambassador.....	c/o Embassy of Guatemala, 2220 R St. N.W., Washington, D.C. 20008, U.S.A.
Guinea.....1962	Ambassador.....	c/o Embassy of the Republic of Guinea, 2112 Leroy Pl. N.W., Washington, D.C. 20008, U.S.A.
Guyana.....1966	High Commissioner.....	c/o Embassy of Guyana, 1701 Pennsylvania Ave. N.W., Washington, D.C. 20006, U.S.A.
Haiti.....1954	Ambassador.....	150 Driveway, Ottawa
Honduras.....	Consul-General.....	1225 St. Mark St., Montreal, Que.
Hungary.....1964	Chargé d'Affaires <i>ad interim</i>	7 Delaware Ave., Ottawa
Iceland.....1948	Ambassador.....	c/o Embassy of Iceland, 2022 Connecticut Ave. N.W., Washington, D.C. 20008, U.S.A.
India.....1947	High Commissioner.....	200 MacLaren St., Ottawa
Indonesia.....1953	Ambassador.....	85 Range Rd., Ottawa
Iran.....1956	Ambassador.....	85 Range Rd., Ottawa
Iraq.....1961	Third Secretary.....	c/o Embassy of India—Iraqi Interests Section, 1801 P St. N.W., Washington, D.C. 20036, U.S.A.

2.—Representation of Other Countries in Canada—continued

Country and Year Representation Established	Present Status of Representative	Address
Ireland.....1939	Ambassador.....	170 Metcalfe St., Ottawa
Israel.....1953	Ambassador.....	45 Powell Ave., Ottawa
Italy.....1947	Ambassador.....	172 MacLaren St., Ottawa
Ivory Coast.....1964	Ambassador.....	c/o Embassy of the Ivory Coast Republic, 2424 Massachusetts Ave. N.W., Washing- ton, D.C. 20008, U.S.A.
Jamaica.....1962	High Commissioner.....	85 Range Rd., Ottawa
Japan.....1928	Ambassador.....	75 Albert St., Ottawa
Korea.....1963	Ambassador.....	151 Slater St., Ottawa
Kuwait.....1965	Ambassador.....	c/o Embassy of Kuwait, 2940 Tilden St. N.W., Washington, D.C. 20008, U.S.A.
Latvia.....	Acting Consul.....	5210 Dalou St., Montreal 29, Que.
Lebanon.....1955	Ambassador.....	660 Lyon St., Ottawa
Lesotho.....1968	High Commissioner.....	c/o Embassy of the Kingdom of Lesotho, 1716 New Hampshire Ave. N.W., Wash- ington, D.C. 20009, U.S.A.
Liberia.....	Honorary Consul-General.....	1010 Beaver Hall Hill, Montreal, P.Q.
Liechtenstein.....	Ambassador of Switzerland.....	5 Marlborough Ave., Ottawa 2, Ont.
Lithuania.....	Acting Honorary Consul- General.....	1 Trillium Terrace, Toronto 18, Ont.
Luxembourg.....1950	Ambassador.....	c/o Embassy of Luxembourg, 2210 Massa- chusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Malagasy Republic.....1965	Ambassador.....	c/o Embassy of the Malagasy Republic, 2374 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Malaysia.....1967	High Commissioner.....	151 Slater St., Ottawa
Mali.....1963	Ambassador.....	c/o Embassy of Mali, 2130 R St. N.W., Washington, D.C. 20008, U.S.A.
Mauritania.....1968	Ambassador.....	c/o Permanent Mission of the Islamic Re- public of Mauritania to the United Na- tions, 8 West 40th St., New York, N.Y. 10018, U.S.A.
Mexico.....1944	Ambassador.....	88 Metcalfe St., Ottawa
Monaco.....	Honorary Consul-General.....	Tour de la Bourse, Place Victoria, Montreal 3, Que.
Morocco.....1962	Ambassador.....	c/o Embassy of Morocco, 1601-21st St. N.W., Washington, D.C. 20008, U.S.A.
Nepal.....1966	Ambassador.....	c/o Embassy of Nepal, 2131 Leroy Pl. N.W., Washington, D.C. 20008, U.S.A.
Netherlands.....1939	Ambassador.....	275 Slater St., Ottawa
New Zealand.....1942	High Commissioner.....	77 Metcalfe St., Ottawa
Nicaragua.....1963	Ambassador.....	c/o Embassy of Nicaragua, 1627 New Hamp- shire Ave. N.W., Washington, D.C. 20009, U.S.A.
Niger.....1963	Ambassador.....	c/o Embassy of Niger, 2204 R St. N.W., Washington, D.C. 20009, U.S.A.
Nigeria.....1966	High Commissioner.....	151 Slater St., Ottawa
Norway.....1942	Ambassador.....	140 Wellington St., Ottawa
Pakistan.....1949	High Commissioner.....	505 Wilbrod St., Ottawa
Panama.....1962	Ambassador.....	c/o Embassy of Panama, 2601-29th St. N.W., Washington, D.C. 20008, U.S.A.
Peru.....1944	Ambassador.....	539 Island Park Dr., Ottawa
Philippines.....	Consul-General.....	Seymour Bldg., 525 Seymour St., Vancou- ver 2, B.C.
Poland.....1942	Ambassador.....	10 Range Rd., Ottawa
Portugal.....1952	Ambassador.....	645 Island Park Dr., Ottawa
Romania.....1967	Ambassador.....	c/o Embassy of the Socialist Republic of Romania, 1607-23rd St. N.W., Washing- ton, D.C. 20008, U.S.A.
Rwanda.....1965	Ambassador.....	c/o Embassy of the Republic of Rwanda, 1714 New Hampshire Ave. N.W., Wash- ington, D.C. 20009, U.S.A.
San Marino.....	Honorary Consul-General.....	27 McNider Ave., Montreal 8, Que.
Senegal.....1963	Ambassador.....	c/o Embassy of the Republic of Senegal, 2112 Wyoming Ave. N.W., Washington, D.C. 20008, U.S.A.
Sierra Leone.....	High Commissioner.....	c/o Embassy of Sierra Leone, 1701-19th St. N.W., Washington, D.C. 20009, U.S.A.
Somalia.....	Ambassador.....	c/o The Permanent Mission of the Somali Republic to the United Nations, New York, U.S.A.
South Africa.....1938	Ambassador.....	15 Sussex Dr., Ottawa
Spain.....1953	Ambassador.....	124 Springfield Rd., Ottawa

2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established	Present Status of Representative	Address
Sudan.....1966	Ambassador.....	c/o Permanent Mission of the Sudan to the United Nations, 757 Third Ave., New York, N.Y. 10017, U.S.A.
Swaziland.....1968	High Commissioner.....	c/o Embassy of Swaziland, Georgetown Bldg., 2233 Wisconsin Ave. N.W., Washington, D.C. 20007, U.S.A.
Sweden.....1943	Ambassador.....	140 Wellington St., Ottawa
Switzerland.....1946	Ambassador.....	5 Marlborough Ave., Ottawa
Tanzania, United Republic of 1965	High Commissioner.....	230 Gloucester St., Ottawa
Thailand.....1962	Ambassador.....	85 Range Rd., Ottawa
Togo.....1966	Ambassador.....	c/o Embassy of the Republic of Togo, 2208 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A.
Trinidad and Tobago.....1962	High Commissioner.....	75 Albert St., Ottawa
Tunisia.....1957	Ambassador.....	c/o Tunisian Permanent Mission to the United Nations, 40 East 71st St., New York 21, N.Y., U.S.A.
Turkey.....1944	Ambassador.....	197 Wurttemberg St., Ottawa
Uganda.....1964	High Commissioner.....	c/o Permanent Mission of Uganda to the United Nations, 801 Second Ave., New York 17, N.Y., U.S.A.
Union of Soviet Socialist Republics.....1942	Ambassador.....	285 Charlotte St., Ottawa
United Arab Republic.....1954	Ambassador.....	454 Laurier Ave. E., Ottawa
United States of America.....1927	Ambassador.....	100 Wellington St., Ottawa
Upper Volta.....1966	Ambassador.....	c/o Embassy of the Republic of Upper Volta, 5500-16th St. N.W., Washington, D.C. 20011, U.S.A.
Uruguay.....1948	Chargé d'Affaires <i>ad interim</i>	124 Springfield Rd., Ottawa
Venezuela.....1953	Ambassador.....	140 Wellington St., Ottawa
Yugoslavia.....1942	Ambassador.....	17 Blackburn Ave., Ottawa

Section 3.—International Activities, 1967-68

Subsection 1.—Canada and the Commonwealth

The Commonwealth today has been transformed basically from the compact and like-minded family of nations of predominantly European stock which constituted the Commonwealth association from the enactment of the Statute of Westminster in 1931 to 1947. With its present membership of 28 sovereign states covering about one quarter of the earth's land surface, representing close to 850,000,000 people of many colours, creeds and languages, and including both economically developed and under-developed countries as well as governments committed and uncommitted in the international power groupings, the Commonwealth more accurately reflects the world over which it spreads so widely. The interests of its members extend to all continents and the variety of problems demanding their attention has greatly increased in scarcely more than a decade.

Commonwealth members are enumerated according to the year (if post-1931, noted in brackets) when membership was proclaimed: Britain; Canada; Australia; New Zealand; India (1947); Pakistan (1947); Ceylon (1948); Ghana (1957); Malaya (1957); Nigeria (1960); Cyprus (1961); Sierra Leone (1961); Tanganyika (1961); Jamaica (1962); Trinidad and Tobago (1962); Uganda (1962); Kenya (1963); Malawi (1964); Malta (1964); Zambia (1964); The Gambia (1965); Singapore (1965); Guyana (1966); Botswana (1966); Lesotho (1966); Barbados (1966); Mauritius (1968); and Swaziland (1968). Early in 1964, Tanganyika joined Zanzibar to form the United Republic of Tanzania. When Singapore, Sarawak and Sabah joined the Federation in September 1963, Malaya became Malaysia; Singapore separated from Malaysia in August 1965.

The Commonwealth Secretariat, established by a 1965 decision of Prime Ministers, has its headquarters at Marlborough House, London. Its first Secretary-General is Mr.

Arnold Smith, a Canadian. The Secretariat has the responsibility of organizing and servicing official Commonwealth conferences; it facilitates the exchange of information between member countries and generally stands at the service of all Commonwealth governments as a visible symbol of the spirit of co-operation which animates the Commonwealth. The Secretariat of the former Commonwealth Economic Committee and the Commonwealth Education Liaison Unit, both based in London, were amalgamated with the Secretariat at the end of 1966, and their first integrated budget was approved by Commonwealth Governments in 1967. It was decided that a scientific adviser should be appointed to the Secretariat and that the appointee would also act as Secretary to the Commonwealth Scientific Committee in London. A Canadian, Dr. Robert Glen, formerly Assistant Deputy Minister of Agriculture, took up this appointment in April 1968.

Membership in the Commonwealth is one of the fundamental aspects of Canadian foreign policy. Canada has supported the extension and development of a strong Commonwealth, capable of exerting significant influence for international peace and progress. Commonwealth ties give Canada a special relationship with this group of nations which, despite the diversity of their backgrounds, share important ideals and traditions in common. Commonwealth ties are characterized in the main by a spirit of co-operation developed through consultation and exchange of views. These are continuous not only in Commonwealth capitals but in other countries and also at United Nations and other international gatherings.

In addition to these continuing exchanges at many levels, special meetings are convened for the purpose of discussing and co-ordinating the interests of Commonwealth members in various special fields, and to review international developments in the Commonwealth context. Heads of Government (Prime Ministers and Presidents) did not meet in 1967 or 1968 but other meetings in 1967 included those of the Finance Ministers and Chief Justices in Trinidad, the Communications Council in London and Sydney, Australia, Survey Officers and Auditors-General in London, Forestry experts in New Delhi, India, and the Commonwealth Parliamentary Association in Kampala, Uganda. Meetings in 1968 included the Broadcasting Conference in Wellington, New Zealand, the Education Conference in Lagos, Nigeria, Finance Ministers in London, the Forestry Conference in New Delhi, the Medical Conference in Kampala, the Conference on Mathematics in Schools in Trinidad, the Scientific Committee in Karachi and the Telecommunications Council in Montreal.

Canada's external aid for developing countries continued to be directed, in the main, to Commonwealth countries through the Colombo Plan, the Special Commonwealth Africa Assistance Plan (SCAAP), and the Canadian program for Commonwealth Caribbean assistance. Canada's total contribution under the Colombo Plan since its inception exceeds \$980,000,000. (See pp. 148-151.)

Canada is an active participant in the Commonwealth Scholarship and Fellowship Plan (see also p. 150), contributing \$1,300,000 in 1968-69. During the 1967-68 academic year, Canada received 204 students under this Plan, the majority from developing countries. Canada is also playing a significant part in the training and provision of teachers for service in Commonwealth countries and assisting in plans for co-operation in technical education. During the academic year 1967-68, there were over 500 Canadian teachers and university professors serving under Canadian Government aid programs in the less-developed countries of Southeast Asia, Africa and the Caribbean area, a very substantial proportion of them in Commonwealth countries.

Subsection 2.—Francophonie

Heir to the great traditions of the French language and culture, Canada is also contributing fully to the establishment of special links between francophone countries. Its bilateral relations with France have developed greatly in recent years through political consultations, parliamentary visits, cultural and scientific exchanges, increased trade, officer exchanges, defence production co-operation, and the like. Links with other French-speaking countries have also been strengthened by the establishment of diplomatic missions

and developing exchanges in a number of fields. A growing proportion of Canadian economic aid has been directed to francophone countries in Africa (see p. 150). Canada is taking part in current endeavours to develop multilateral co-operation between French-speaking countries, a policy based on the recognition of the value to Canada of its ties with a multi-racial community of some 30 countries with 150,000,000 inhabitants, linked together by French culture.

Subsection 3.—Canada and the United Nations

Firm support for the United Nations is an essential element of Canadian foreign policy. Canada has contributed over the years to the efforts of the organization to keep the peace in various parts of the world, including the Middle East, Kashmir, the Congo, West Irian and Cyprus. In the 1956 Middle East crisis, Canada played a significant role in the establishment of the United Nations Emergency Force and participated in the Force until its withdrawal in 1967. In 1960, Canada responded to a UN request for support of its operations in the Congo by supplying military and civilian specialists and by pledging political and financial support. In 1962, Canada provided aircraft, pilots and maintenance crews to assist the United Nations Temporary Executive Authority (UNTEA) in the exercise of its peacekeeping functions in West Irian. Canada maintains a large contingent in Cyprus (UNFICYP) to assist the UN to prevent open fighting between the Greek and Turkish communities. Canada has consistently advocated the strengthening of the peacekeeping capacity of the UN by means of advance planning at UN headquarters and advance cost-sharing arrangements and has taken steps to improve the readiness of its own forces and urged that others be invited to do the same. Despite slow progress and occasional setbacks, Canada continues to believe that the UN has an important role to play in the maintenance of international peace and security.

Canada also participates directly in the work of the UN through its membership in various UN bodies including all of the 13 specialized agencies and the International Atomic Energy Agency. The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the UN with headquarters in Canada.

In 1967, Canada completed a three-year term on the Economic and Social Council but continues as a member of most of the important subsidiary bodies of the Council such as the Economic Commission for Latin America, the Committee for Programme and Coordination, the Inter-Governmental Committee of the UN/FAO World Food Programme, the Commission on Social Development, the Statistical Commission, the Commission on Narcotic Drugs and the Committee on Housing, Building and Planning.

Canada also serves on the Governing Council of the United Nations Development Programme (UNDP) and the Industrial Development Board of the United Nations Industrial Development Organization (UNIDO). Canada participates directly on the Executive Committee of the Office of the United Nations Children's Fund (UNICEF), the Trade and Development Board of the United Nations Conference on Trade and Development (UNCTAD) and the Executive Committee of the Office of the United Nations High Commissioner for Refugees (since the Second World War, Canada has received approximately 350,000 refugees from overseas).

Canada belongs to 16 subsidiary bodies of the General Assembly, including the Committee on the Peaceful Uses of Outer Space, the Disarmament Commission, the Special Committee on Peacekeeping Operations and the United Nations Scientific Committee on the Effects of Atomic Radiation. Canada maintains Permanent Missions at both UN headquarters in New York and at the European Office of the organization in Geneva.

Canada pays 3.02 p.c. of the organization's regular budget and is the eighth largest contributor. In the year ended Mar. 31, 1968, Canada's share of the gross expenses of \$152,950,000 (Cdn.) was approximately \$3,795,000. The cost to Canada of maintaining its contingent in Cyprus was about \$2,000,000 in 1967. In addition, Canada makes voluntary contributions to special UN programs such as the United Nations Development Programme (UNDP), the United Nations High Commissioner for Refugees (UNHCR),

the United Nations Children's Fund (UNICEF), the United Nations Relief and Works Agency in the Middle East (UNRWA) and the World Food Programme (WFP).

Canada's total assessment and contributions to the UN, its Specialized Agencies and related bodies totalled approximately \$378,000,000 during the period 1945-68 and about \$39,000,000 in 1967. In 1967, Canada's quota (assessed share of capital) for the International Bank for Reconstruction and Development (IBRD) and the International Monetary Fund (IMF) was increased about \$45,405,000, of which some \$4,540,000 was paid during 1967. The Canadian subscription to the IBRD now totals \$856,215,150.

Canada will complete a two-year term on the Security Council on Dec. 31, 1968, having previously served in 1947-48 and 1958-59.

Canadian Financial Contributions to the United Nations.—Canada's contributions to the United Nations system as at Mar. 31, 1968 were as follows:—

<i>Agency</i>	<i>Percentage Assessment or Voluntary Contribution (V)</i>	<i>Contribution (Cdn. \$)</i>
United Nations—		
Regular Budget.....	3.02	3,795,600
Special Accounts—		
Operations in the Middle East (UNEF).....	V	678,600 ¹
Force in Cyprus (UNFICYP).....	V	2,010,000 ²
Congo Civilian Fund.....	V	600,000
Relief and Works Agency (UNRWA)—		
Cash.....	V	500,000
Food Aid.....	V	2,155,000
World Food Programme—		
Cash.....	V	2,481,445
Commodities.....	V	9,051,000
High Commissioner for Refugees (UNHCR).....	V	350,000
United Nations Development Programme (UNDP) ³	V	10,750,000
Children's Fund (UNICEF).....	V	1,000,000
Institute for Training and Research (UNITAR).....	V	60,000
UN Trust Fund for South Africa.....	V	10,000
UN Programme for Education and Training of South Africans.....	V	25,000
Specialized Agencies and International Atomic Energy Agency—		
International Labour Organization (ILO).....	3.36	902,555
Food and Agriculture Organization (FAO).....	4.07	1,207,017
World Health Organization (WHO).....	2.82	1,767,013
United Nations Educational, Scientific and Cultural Organization (UNESCO).....	2.97	961,877
International Civil Aviation Organization (ICAO).....	4.01	206,474
Inter-Governmental Maritime Consultative Organization (IMCO).....	1.53	15,820
International Telecommunication Union (ITU).....	3.60	203,535
World Meteorological Organization (WMO).....	2.62	63,699
Universal Postal Union (UPU) ⁴	2.66	54,125
International Development Association (IDA) ⁵	V	15,027,012
International Bank for Reconstruction and Development (IBRD) ⁶	V	—
International Finance Corporation (IFC).....	V	—
International Monetary Fund (IMF) ⁶	V	—
International Atomic Energy Agency (IAEA)		
Regular Budget.....	2.85	318,731
Operational Budget.....	V	60,990
Related Organizations—		
International Committee for the Red Cross.....	V	20,000
United Nations Association in Canada.....	V	17,000

¹ UNEF was withdrawn in June 1967. The amount indicated was paid as an advance for the 1967 cost of the force on Apr. 14, 1967. The exact costs of the force until its withdrawal have not as yet been determined. ² Estimated.

This figure from March 1967 to March 1968 represents the cost to Canada of maintaining its contingent in Cyprus after reimbursement for certain expenses by the United Nations; it does not include salaries and similar costs that Canada would have had to pay if the personnel had remained in Canada.

³ The UNDP was formed by the consolidation of the Expanded Programme of Technical Assistance (EPTA) and the Special Fund according to the terms of Resolution 2029 (XX) of Nov. 22, 1965. ⁴ Canada also contributed \$6,567 as its share of the costs of the UPU English Translation Service.

⁵ The third instalment of Canada's supplementary contribution to the first replenishment of IDA. The total Canadian contribution to IDA, including supplementary contributions, is \$85,000,000.

⁶ In 1966 there was a special 1-p.c. increase in the Canadian quota and subscription to the IMF and the IBRD. This brought the totals in both institutions to \$856,000,000, of which 10 p.c., or \$85,600,000, is paid in.

Specialized Agencies.—Canada is a member of each of the 13 Specialized Agencies of the UN. Additionally, Canada holds membership in the International Atomic Energy Agency (IAEA), an autonomous international organization under the aegis of the UN. These Agencies are invested with wide international responsibilities established by inter-governmental agreement, and act in relationship with the UN to assist in carrying out the terms of the Charter. Co-ordination of activities of the Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. This Committee is composed of the Secretary General of the UN, the executive heads of the Specialized Agencies, the Director General of the IAEA and other high officials of the UN. It considers common administrative questions, inter-agency program co-ordination and projects or problems of special urgency to be undertaken jointly by several Agencies. The Agencies also report annually to the Economic and Social Council of the UN.

International Labour Organization.—The International Labour Organization (ILO) was originally established with the League of Nations in 1919 and became a Specialized Agency of the UN in 1946. It brings together representatives of governments, employers and workers from 118 (1967) member states in an attempt to promote social justice by improving living and working conditions in all parts of the world. The ILO is responsible for a number of technical programs financed by the United Nations Development Programme, as well as training programs under its regular budget. To further its work, the ILO holds numerous meetings during the year as well as an annual International Labour Conference in Geneva each June. At the 52nd session of the Conference in June 1968 the principal debate focused on the ILO's role in the field of human rights.

Food and Agriculture Organization.—The Food and Agriculture Organization (FAO) came into being in 1945, the first Conference being held in that year in Quebec City. It now has 117 members. The objectives of the Organization are to raise the levels of nutrition and living standards of its members and to improve the techniques of the production and distribution of food and agricultural, fishery and forestry products. To this end, the FAO Secretariat collects, analyses and distributes technical and economic information and encourages appropriate national and international action. A Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference, which is the governing body of the Organization, meets every other year. Headquarters are in Rome, Italy.

Canada has participated actively in FAO activities and is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposals, the FAO Group on Grains, the North American Forestry Commission and other FAO bodies. A number of Canadians are on the staff at Rome headquarters and many Canadians have undertaken assignments under FAO technical assistance programs. Canadian membership in the Organization is provided for by an Act of the Canadian Parliament passed in 1945. A committee of officials from Canadian Government departments (the Canadian Interdepartmental FAO Committee) maintains liaison between the FAO Secretariat and the Canadian Government.

The World Food Programme first began operations on a three-year experimental basis at the beginning of 1963 under the joint auspices of the FAO and the UN. The Programme provides food aid on a multilateral basis for emergency relief and promotes economic and social development, including feeding of children. At a UN-FAO Pledging Conference in New York in January 1968, \$161,300,000 was pledged toward a two-year program (1969-70). Canada, with a pledge of \$20,000,000, is the second largest supporter of the Programme.

World Health Organization.—The World Health Organization (WHO) came into being in 1948 and is one of the largest of the Specialized Agencies of the UN, having a total membership of 127. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six regional committees), WHO acts

as a directing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The 21st World Health Assembly was held in Geneva in May 1968. (See also Subsect. 9, Sect. 1, Part I of Chapter VI on Health, Welfare and Social Security.)

United Nations Educational, Scientific and Cultural Organization.—The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 “to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms”. Its headquarters is in Paris and total membership at the end of 1967 was 122 states.

The Organization is made up of three principal organs—the General Conference which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. The 14th Session of the General Conference was held in Paris in October and November 1966. It approved a budget of \$61,500,000, giving priority to the educational needs of the developing countries and to science activities, particularly of the application of science to development; the Canadian assessment rate is 2.97. Further information about the Organization may be obtained from the Canadian National Commission for UNESCO, Ottawa.

International Civil Aviation Organization.—The ICAO, with headquarters in Montreal, is the only Specialized Agency of the UN with headquarters in Canada. It was established to study problems of international civil aviation and the establishment of international standards and regulations for civil aviation. ICAO operations are conducted through its Assembly, Council Committees and Secretariat. Canada has been a member of the 27-nation Council, the governing body of ICAO, since its inception in 1947. The Assembly, consisting of all member states, is convened at least once in a three-year period to decide on policy and vote on the budget. The 16th Session of the Assembly was held in Buenos Aires, Argentina, in September 1968.

International Telecommunication Union.—Canada is a member of the International Telecommunication Union (ITU), which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906. The ITU is concerned with the maintenance of international co-operation for the improvement and use of telecommunications of all kinds for the benefit of the general public. It has 129 member countries. The International Telecommunication Convention which was adopted by the Plenipotentiary Conference of the Union at Montreux, Switzerland, in 1965 came into force on Jan. 1, 1967. Canada is represented on the 29-member Administrative Council, the executive organ of the ITU.

World Meteorological Organization.—Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the UN since 1951 but developed from the International Meteorological Organization founded in 1878. The membership in 1967 was 131. The Fifth World Meteorological Congress, held in Geneva in April 1967, approved a program for the development of an improved world-wide meteorological system which was given the name “World Weather Watch”. Canada is a member of the Executive Committee of the Organization.

Inter-Governmental Maritime Consultative Organization.—The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the highest standards of safety and navigation and has a membership of 65 (1967). IMCO exercises bureau functions for International Conventions on Safety of Life at Sea, Prevention of Pollution of the Sea by Oil and Facilitation of International Maritime Traffic. Canada was elected to the Council of IMCO for a two-year term ending in 1969 and to the Maritime Safety Committee for a four-year term ending in 1969.

Universal Postal Union.—With a membership of 132 (1967), the Universal Postal Union (UPU) is one of the largest of the Specialized Agencies of the UN; it is also one of the oldest, having been founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and normally meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council of which Canada is at present a member, a consultative committee on postal studies, and an international bureau. The 16th Congress will be held in Tokyo in 1969.

International Monetary Fund.—The International Monetary Fund, established by the Bretton Woods Conference in 1944, came into being in 1945. It provides machinery for international consultation and collaboration on monetary, payment and exchange problems, including the promotion of exchange stability, the elimination of exchange restrictions, the establishment of a multilateral system of current payments and the expansion and balanced growth of international trade. Also member countries under certain conditions may draw on the regular resources of the Fund, which now amount to some \$21,000,000,000 (of which the equivalent of about \$3,700,000,000 is in gold) or on the supplementary resources of \$6,000,000,000 made available in 1962 under the General Arrangements to Borrow, which in 1966 were extended until 1970. The Fund has 107 members. Canada has been represented on the Fund's Executive Board since its inception.

World Bank Group.—The World Bank Group, consisting of the International Bank for Reconstruction and Development, or World Bank, the International Finance Corporation and the International Development Association, is by far the largest of the multilateral aid-giving institutions and accounts for 11 p.c. of the capital flows to the less-developed countries from all multilateral and western bilateral aid agencies combined.

The *International Bank for Reconstruction and Development* or *World Bank*, like the International Monetary Fund, originated in the Bretton Woods Conference of 1944. Its early loans were made to assist in the postwar reconstruction of Europe but it has played an increasingly important role in the provision of financial assistance and economic advice to the less-developed countries.

By June 30, 1968, the Bank had made 552 loans totalling \$11,200,000,000 (U.S.). The resources available to the Bank for use in its lending operations are (1) that portion of its subscribed capital which is paid in by governments and freely usable (\$1,800,000,000); (2) its retained profits (\$1,300,000,000); and (3) the funds it is able to raise by the sale of bonds to central banks and government agencies and on private capital markets. The World Bank lends its available funds at an interest rate slightly above its current cost of borrowing—the present rate (1968) is 6.5 p.c.—and with maturity periods usually ranging between 15 and 25 years. The level of the Bank's lending in the year ended Mar. 31, 1968, was \$850,000,000. The greater part of the Bank's lending has financed so-called infrastructure projects which provide the framework supporting the rest of a country's economy but which generally do not attract private investors. About one third of the total loans has financed the development of electric power plants and transmission lines; another third has financed railways, roads and ports; and most of the remainder has been divided between industry and agriculture. In recent years, however, the Bank has been making loans for education and placing increasing emphasis on agriculture.

Canada's subscription to the World Bank is \$792,000,000 (U.S.) out of a total for all countries of \$22,800,000,000. Only 10 p.c. of each subscription is paid in, however, with the balance remaining as a guarantee against which the Bank is able to sell its own bonds in world capital markets. By selling such bonds and by selling loans from its portfolio to other investors, the World Bank augments its capital. As of June 30, 1968, the Bank had outstanding borrowings of \$3,290,000,000 (U.S.), mostly in the form of U.S. dollar bonds but also including issues denominated in Canadian dollars, Belgian francs, Deutsche marks, Italian lire, Netherlands guilders, pounds sterling, Swedish kronor and Swiss francs. In all, the Bank has offered seven bond issues totalling \$135,000,000 (Cdn.) in the Canadian

market. Maturities on these bonds range from one to 25 years and the interest rate from $3\frac{1}{2}$ p.c. to 7 p.c. In the past four years there has been one 25-year issue each year for a total of \$80,000,000 (Cdn.). The latest issue in early 1968 carried a yield to investors of 7.22 p.c.

The *International Finance Corporation* (IFC) was established in 1956 as an affiliate of the IBRD to assist less-developed member countries to promote the growth of the private sector of their economies. IFC's principal objectives are to provide risk capital for productive private enterprises, in association with private investors and management; to encourage the development of local capital markets; and to stimulate the international flow of private capital. IFC makes investments in the form of share subscriptions and long-term loans, carries out standby and underwriting arrangements, and provides financial and technical assistance to privately controlled development finance companies. Of IFC's total subscribed capital of \$101,400,000 (U.S.), Canada provided \$3,600,000 (U.S.). In addition to its subscribed capital, IFC is able to finance its activities through loans from its parent institution, the World Bank. Total investments and underwriting commitments by IFC to June 1968 amounted to \$270,000,000 (U.S.) and the level of activity in the past two years was \$50,000,000 annually.

The *International Development Association* (IDA), also an affiliate of the IBRD, was established in 1960 to meet the situation of a growing number of less-developed countries whose need for, and ability to make use of, outside capital is greater than their ability to service conventional loans. Consequently, the terms of IDA development credits are designed to impose far less burden on the balance of payments of borrowing countries than conventional loans. Credits extended to June 1968 have each been for a term of 50 years, bearing no interest but with a service charge of $\frac{3}{4}$ of 1 p.c. per annum. IDA secures its resources from governments in the form of interest-free subscriptions and contributions and, to a smaller extent, from a portion of World Bank profits. As of June 30, 1968, resources made available to the Association totalled approximately \$1,800,000,000 (U.S.), of which Canada contributed \$79,500,000 (U.S.). Credits extended by the Association also totalled about \$1,800,000,000 (U.S.). Tentative agreement had been reached, subject to legislative approval, on further contributions over the three years 1968-69 to 1970-71 totalling \$1,200,000,000 (U.S.) or \$400,000,000 (U.S.) a year. Canada's share of this replenishment would be \$75,000,000 (U.S.) over the three years.

International Atomic Energy Agency.—Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the U.N. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world in a variety of ways. Because Canada has been designated as one of the five members most advanced in nuclear technology, including the production of source materials, a Canadian representative has served on the IAEA Board of Governors since the inception of the Agency.

As of June 1968, IAEA membership consisted of 98 states. The organization of conferences and symposia of experts, the dissemination of information and the provision of technical assistance are among the methods that the Agency adopts to carry out its functions. With the rapid expansion in the use of nuclear power, much of the Agency's program is devoted to this field as well as to the use to which isotopes may be put in agriculture and medicine. An aspect of the IAEA activities that is becoming increasingly significant relates to the development and application of safeguard measures to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses.

International Law Commission.—By Article 13(1) of the Charter of the United Nations, one of the purposes of the UN General Assembly is to encourage the progressive development of international law and its codification. In order to implement and to assist in this function, the International Law Commission was created by a General Assembly resolution dated Nov. 21, 1947. It is composed of 25 members who are elected in their individual capacity. They serve for terms of five years and, in general, represent the

main forms of civilization and principal legal systems of the world. As at Dec. 31, 1968, the 25 countries whose nationals formed the International Law Commission were: Afghanistan, Algeria, Argentina, Brazil, Britain, Chile, Dahomey, Finland, France, Greece, Hungary, India, Iraq, Israel, Italy, Japan, Madagascar, Mexico, Netherlands, Nigeria, the Union of Soviet Socialist Republics, the United Arab Republic, the United States of America, Uruguay and Yugoslavia. Canada's term expired in 1968.

Subsection 4.—Canada and the Disarmament Committee

As a member of the Eighteen-Nation Disarmament Committee (ENDC), Canada seeks to encourage and participates in the negotiation of international agreements to control the nuclear arms race and to reduce and eventually to eliminate nuclear weapons. The non-proliferation treaty is the most notable recent agreement of this type. Canada also promotes and participates in negotiations on complementary measures such as the reservation of the seabed for peaceful purposes and on measures relating to non-nuclear weapons. The ultimate objective of disarmament negotiations is the achievement of general and complete disarmament under effective international control.

Subsection 5.—Canada and the North Atlantic Treaty Organization

Two Ministerial Meetings of the North Atlantic Council were held during 1967, and meetings of Permanent Representatives were held continuously throughout the year at NATO Headquarters.

The Canadian delegation to the annual spring Ministerial Meeting held in Luxembourg June 13 and 14 was led by the Secretary of State for External Affairs and the President of the Privy Council. Discussions covered a wide range of problems. The Middle East crisis, and particularly its implications for the West, was the main topic. Member governments expressed their determination to support all efforts to establish a lasting peace in this area and to resolve the outstanding problems in a spirit of equity and in accordance with the legitimate interest of all concerned. Discussions also covered East-West relations and agreement was reached among NATO governments that they continue their efforts to expand contacts with the countries of Eastern Europe, notwithstanding the strains created by the events in the Middle East. Desire was expressed to see progress made in the field of disarmament and arms control, including steps directed toward preventing the proliferation of nuclear weapons. It was noted that a balanced reduction of forces by the East and West would constitute a significant step toward security in Europe. An interim report on the study of the future tasks of the Alliance was received, the final report to be available for the December meeting.

The Ministerial Meeting on Dec. 12, 13 and 14 was the first to take place at NATO's new headquarters in Brussels. Canada's delegation was led by the Secretary of State for External Affairs and the Minister of National Defence. As expected, the future tasks of the Alliance was the dominant theme. NATO's essential objectives were reappraised and found to be still valid; a new military strategy was agreed upon; and guidelines were established for putting additional emphasis on the organization's evolving political—as distinct from military—activities. These guidelines were the outcome of the study proposed in December 1966 by Foreign Minister Harmel of Belgium.

All 15 member governments accepted a definition of the objectives and future tasks of the Alliance in the following terms: there was a continuing need for defensive military arrangements, through which the Alliance could exhibit its determination to resist aggression; the political activities of the Alliance designed to promote a peace settlement in Europe had assumed a greater importance, and should be emphasized; there was a need for full and timely consultation among members in order to ensure the effectiveness of these political activities; and the military tasks of the Alliance were not incompatible with, but rather a necessary complement to, a constructive political role for the Alliance.

In agreeing that one of the essentials for achieving an improvement in East-West relations and a peaceful settlement in Europe must be NATO's continuing military strength and capability to deter aggression, the Ministers adopted a revised strategic concept submitted by the Military Committee following the first comprehensive review of NATO's strategy since 1956. The new strategy envisaged NATO having available a flexible and balanced range of responses, conventional and nuclear, for all levels of aggression or threats of aggression. These responses, subject to appropriate political control, were designed primarily to deter aggression and thus preserve peace. If aggression did occur, however, they would maintain the security and integrity of the North Atlantic Treaty area within the concept of forward defence, while affording maximum opportunity to avoid employing nuclear weapons.

The Nuclear Defence Affairs Committee, established in 1966 to advise the NATO Council on nuclear policy, met and received progress reports on the studies of the Nuclear Planning Group, of which Canada was a member. The year's work on a range of subjects was reviewed, particularly strategic nuclear forces, developments concerning anti-ballistic missiles, tactical use of nuclear weapons and national participation in nuclear planning. Consultation prior to the possible use of nuclear weapons was discussed.

The Defence Planning Committee, which consists of all NATO countries except France, also met and reviewed the work accomplished since May 1967. All Ministers strongly endorsed the view, which was later reflected in the communiqué, that one of the essential requirements for achieving an improvement in East-West relations and a peaceful settlement in Europe was NATO's continuing defensive strength and capability to deter aggression.

At the June 1968 meeting held in Reykjavik, Iceland, the Canadian delegation was led by the Under-Secretary of State for External Affairs. After examining the situation created by the recent measures affecting the access routes to Berlin, Ministers expressed the determination of the Three Powers responsible for the security of Berlin to maintain freedom of access to the city. Note was taken of the decision of the governments of the Three Powers and of the Federal Republic of Germany to remain in continuous consultation concerning Berlin and to stand ready to meet any contingency. Intentions were reaffirmed to continue efforts to improve East-West relations. Representatives of nations participating in the NATO defence program adopted a declaration on mutual force reductions that would be reciprocal and balanced in scope and timing, would serve to maintain the present degree of security at reduced cost but not risk destabilizing the situation in Europe and should be consonant with the aim of creating confidence in Europe generally and for each party concerned. The permanent representatives to NATO were directed to make all necessary preparations for discussions on this subject with the Soviet Union and other countries of Eastern Europe and to call on them to join in the search for progress toward peace.

A Permanent Council report was approved which dealt in detail with the situation in the Mediterranean and related defence problems and was directed to extend their consultations in range and depth as circumstances required. Representatives of countries taking part in the Defence Planning Committee, concerned at the recent expansion of Soviet activity in the Mediterranean, directed the permanent representatives, with the assistance of the NATO military authorities, to take under early consideration measures designed to safeguard the security interests of NATO members in the Mediterranean area and to improve the effectiveness of allied forces in that area. France disassociated itself from these decisions. Satisfaction was expressed with recent developments in Greek-Turkish relations and the hope expressed that informal talks started between the two communities of the Republic of Cyprus would make an important contribution toward the settlement of the problem.

The regular semi-annual meeting of the North Atlantic Council in Ministerial session customarily held in December was advanced in 1968 to permit consideration of the con-

sequences for the Alliance of the situation created by the Soviet invasion of Czechoslovakia. Canada was represented at this meeting, held in Brussels Nov. 14-16, by the Secretary of State for External Affairs and the Minister of National Defence.

The Ministers of the 15 countries participating in the meeting were unanimous in their condemnation of Soviet armed intervention in the internal affairs of another country and agreed that the resulting situation had created an element of uncertainty about future Soviet intentions as they affect the security of the West. In these circumstances, they re-affirmed their determination to defend the members of the Alliance against any armed attack in accordance with the Treaty and indicated that any Soviet intervention directly or indirectly affecting the situation in Europe or in the Mediterranean would create an international crisis with grave consequences. They could not remain indifferent to any development that threatened the security of the members of the Alliance.

The members participating in NATO's integrated defence program agreed that in the circumstances there was a need to re-assess their defences and indicated various measures they were taking to ensure that the security of NATO was being maintained at an adequate level. At the same time, they re-affirmed NATO's determination to pursue the long-term goal of détente in East-West relations and to exploit all opportunities to make progress in disarmament.

The Canadian Ministers cautioned against the Alliance over-reacting to Soviet actions in Czechoslovakia which were not directed specifically against members of NATO. They stated that, while it was natural to stress the defensive character of the Alliance, it was essential that NATO seek all reasonable opportunities to resume dialogue with the Soviet Union and thus promote progress toward the peaceful settlement of the issues facing Europe. It was explained that Canada was proceeding with its review of defence policy but in the meantime would maintain its professional forces in Europe and in Canada at their high level of training, equipment and operational readiness.

Canadian Contribution to NATO.—During 1967-68 Canada continued its policy of support for NATO. As its contribution to the military strength of the Alliance, Canada maintained an army brigade group and an air division in Europe and supporting forces in Canada, including two battalions assigned to the Allied Command Europe Mobile Force. Canadian naval forces continued to be assigned to the Supreme Allied Commander Atlantic (SACLANT), for the defence of the North Atlantic region. Canada also participated with the United States in the defence of the North American Continent through the North American Air Defence Command (NORAD).

Since 1950, Canada has contributed approximately \$1,890,000,000 to NATO infrastructure and related military programs and to mutual assistance to the European members of NATO. The mutual assistance program has consisted of transfers of equipment to member countries and aircrew training in Canada of NATO forces. The program has, of course, decreased in magnitude with the changing conditions and the increasing ability of the European members to meet their individual defence requirements.

Subsection 6.—Canada and the United States

Relations between Canada and the United States are of vital importance to each and this has long been recognized by both countries. History and geography have made the two countries neighbours and the demographic realities and economic patterns of today contribute to the partnership that characterizes the relations between them. For example, Canada, which lives by its world trade, sells to the United States some three quarters of all its exports and buys almost one quarter of that country's exports. This exchange of goods, which totals some \$15,000,000,000 a year, is only one illustration of the importance each country has for the other and of the significance of co-operation and understanding in their relationship. Co-operation in bilateral matters and in working toward the objectives that Canadians and Americans share in international affairs has marked this unique rela-

tionship in the past and experience has demonstrated a willingness on both sides of the common border to maintain and foster the spirit of sympathetic understanding to which both countries have become accustomed in their dealings with each other.

As indicated in the previous Sections and Subsections of this Chapter, both countries are active members of the United Nations and its many specialized agencies and both participate actively in the North Atlantic Treaty Organization (NATO), the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD), and other important international organizations. There are also many bilateral bodies that facilitate Canada-United States co-operation. The Ministerial Committee on Trade and Economic Affairs annually brings together members of the Cabinet in both countries for extensive discussions on a wide range of problems of bilateral and international interest. The Permanent Joint Board on Defence and the International Joint Commission are forums, respectively, for the discussion of North American defence and problems related to boundary waters, and many joint committees and agencies deal with other specialized subjects. But perhaps the most important factor in reinforcing the traditional friendship of the two countries is the continual intermingling of their peoples as private individuals across the shared border.

Subsection 7.—Canada and Latin America

Canada has formal diplomatic relations with all 20 Latin American Republics and maintains 14 resident diplomatic missions in the area. Canada's relations with these countries have increased appreciably during the past few years in every field.

Canada is a member of three Inter-American organizations linked with the Organization of American States—the Pan-American Institute of Geography and History, the Inter-American Statistical Institute and the Inter-American Radio Office. Since 1931, Canada has been a member of the Postal Union of the Americas and Spain, which, although not an OAS organization, is closely related to that body. Canada joined the United Nations Economic Commission for Latin America in 1961.

Canada has also been officially represented at a growing number of meetings and conferences concerned with Latin American and Inter-American affairs. Canadian observer groups have regularly attended the annual Ministerial Meetings of the Inter-American Economic and Social Council, the Pan-American Health Organization, and the Inter-American Cultural Council, all organs of the OAS, and the Inter-American Committee for the Alliance for Progress. In addition, observers are occasionally sent to meetings of the Inter-American Children's Institute and the Inter-American Indian Institute. During the past few years, Canada has been represented in an observer capacity at several high-level OAS meetings, including the extraordinary conference in Buenos Aires. In addition to attendance at meetings of some of the bodies mentioned in the preceding paragraph, Canada has recently been represented at the conference of Ministers of Education and Economic Planning of Latin America and at a meeting of the Centre for Latin American Monetary Studies, both held in Buenos Aires, at the Seventh Meeting of the Inter-American Development Bank in Mexico, at the Inter-American Conference of the Ministers of Labour in Caracas, at the annual meeting of the Inter-American Tropical Tuna Commission in Guayaquil, Ecuador, and at the Seminar on Tax Administration in Washington. In addition, Canada acted as host for the American Regional Conference of the International Labour Organization, held in Ottawa in September 1966. A Canadian expert represented Canada unofficially at the Inter-American Meeting of Copyright Experts in Rio de Janeiro.

In December 1964, the Canadian Government signed an agreement with the Inter-American Development Bank under which Canada agreed to make available \$10,000,000 (Cdn.) in development loan funds for use in financing development projects in Latin America. This initial commitment has been followed in each of the three succeeding years by additional commitments of an equal amount, bringing the total Canadian development

loan funds made available to Latin America to a level of \$40,000,000 (Cdn.). As at September 1968, 11 Canadian development loans totalling \$22,256,000 (Cdn.) have been approved for financing of development projects in Latin America.

Although the volume of Canadian trade with Latin America is still a small part of total Canadian trade, it has more than trebled since the end of the Second World War. Venezuela, Cuba, Mexico and Argentina rank among the top 25 Canadian export markets. The Canadian Government has directly facilitated Canadian exports to Latin America and indirectly assisted Latin American economic development through the provision of long-term credits under the Export Credits Insurance Act; these credits total more than \$153,000,000 (Cdn.).

Subsection 8.—Canada and Europe, the Middle East, Africa and the Far East

Canada and Europe.—Canada's relations with Europe spring from the common cultural heritage that this country shares with Britain and France and also reflect its traditional links with other European countries from which Canada's population derives. Canada's substantial participation, on European soil, in the two World Wars has further strengthened these relations. In view of their importance, the Canadian Government has undertaken a major review of its relations with Europe to determine how they can be most effectively conducted and developed.

Since 1945, Canada's relations with Western Europe have steadily developed under the impulse of major Canadian interests in the area. In the political and defence fields, Canada expresses through its NATO membership in particular its interest in the security of Western Europe and in an eventual European settlement. Exchanges with Western Europe are playing an increasingly important role in Canada's cultural life and in the development of its bicultural policy. Western European countries, especially Britain, have been major trading partners for Canada and its chief source of immigrants. Accordingly, Canada maintains close and extensive bilateral relations with Britain and France in particular, as well as with most of the Western European countries and has resident diplomatic missions in almost all of them. It also co-operates actively with them in a number of multilateral organizations such as the Organization for Economic Co-operation and Development (OECD). As Western Europe becomes increasingly prosperous and cohesive, it tends to assume greater importance for Canada for the influence that it wields, for the possibility of fruitful co-operation it offers in many fields and for the element of balance it can provide to Canada's external relations.

Canada's relations with Eastern Europe have suffered a setback as a result of the military intervention in Czechoslovakia by the Soviet Union and four of her Warsaw Pact allies on Aug. 20, 1968. For a number of years prior to this event, Canada had been greatly encouraged by the general relaxation of international tensions in Europe, which had made it possible to envisage an equitable settlement of European problems. During this period, Canada's bilateral relations with Eastern Europe were characterized by an increase in the volume of trade and tourism, official and semi-official visits in both directions, and agreement on many outstanding issues involving such matters as Canadian claims. Diplomatic relations were extended from Canada's existing resident missions in Moscow, Prague, Warsaw and Belgrade to cover Hungary, Romania and Bulgaria through non-resident Ambassadors. The peak of Canada's relations with Eastern Europe was reached during Expo 67 as a result of the significant contributions made by Czechoslovakia, Yugoslavia and the Soviet Union. Unfortunately, the Soviet resort to force has damaged the international confidence which these developments had done much to create but the long-term objective of establishing normal relations between East and West remains.

Canada and the Middle East.—Since the Second World War, the Middle East has been a focus of tension and conflict. During this period, Canada has participated in United Nations efforts to promote calm and stability in the area. It has also contributed substantially to measures to alleviate want among the victims of recurring hostilities. ¶

Canada provided observers to the United Nations Truce Supervision Organization (UNTSO) and was closely associated with the formation of the United Nations Emergency Force (UNEF). Canadian troops served with UNEF in Gaza and Sinai from its inception until its withdrawal in May 1967. Canadian officers continue to serve with UNTSO, which is supervising the Arab-Israeli cease-fire.

Since the establishment of the United Nations Relief and Works Agency for Palestine refugees (UNRWA), Canada has been one of the leading contributors to that Agency. Canadian Government contributions have taken the form of cash, food and other supplies aimed at relieving human suffering in the Middle East. In emergency situations it has provided various forms of assistance through the International Red Cross.

Canada and Africa.—Canada in the past had a certain latent interest in Africa and carried on considerable commercial and missionary activity but relations with African countries have evolved rapidly over the past ten years, paralleling the accession to independence of the majority of former colonial territories. The increasing voice of these newly independent states in world affairs, together with a recognition of their development problems and the importance of the political issues affecting the whole African Continent, have sparked this evolution.

Direct relations were first established with the former British colonies in a natural way as they became independent within the Commonwealth. Increasing contacts and diplomatic relations with the newly independent French-speaking African states soon followed in recognition of the bicultural outlook of this country and the important role played by these countries in African affairs. Canada now has diplomatic relations with almost all the independent African states and there are resident Canadian missions in 11 countries on that Continent. Coupled with the development of bilateral diplomatic and commercial relations has been the elaboration of a significant program of Canadian aid to Africa. This program, with its English and French components, directs more than \$30,000,000 of aid funds annually to the African Continent (see pp. 149-151).

Canada and the Far East.—Canada has had important links, both official and private, with the Far East over many years and is becoming steadily more aware of its position as a Pacific as well as an Atlantic nation. With the development of modern transport and communications, the Pacific Ocean has ceased to be a barrier and as a result contacts between Canadians and the peoples of the Far East are increasing rapidly in number and variety. Many of these contacts are based on the growing volume of trade and other forms of economic co-operation. Japan in particular is Canada's third largest trading partner and bilateral exchanges between the two countries amounted in 1967 to almost \$880,000,000. In addition to the normal dialogue between the two governments through their respective embassies, political contact is maintained through regular meetings of Cabinet Ministers to discuss matters of mutual concern. Canada was the first country to announce its intention to participate in Expo '70 at Osaka which will feature a Canadian Government pavilion representing the country as a whole and also provincial pavilions for Quebec, Ontario and British Columbia.

Canada has continued its policy of developing trade and other relations with Communist China, on the premise that Peking should not be isolated but rather encouraged to become more involved in the international community. While Canada has not, in the past, maintained diplomatic relations with Peking, the question of Canadian recognition has been under intensive study during the latter part of 1968, following a policy statement which declared the Government's intention to seek a satisfactory basis for diplomatic relations between Canada and China.

As a member of the International Commissions in Viet-Nam, Laos and Cambodia, Canada has maintained a close interest in the region formerly known as Indo-China. Canadian policy both within the Commissions and in a broader international context has been based on recognition of the needs of the countries of the region for political and economic

stability. The course of events in Viet-Nam in recent years has cut across these objectives and in these circumstances the overriding concern of Canadian policy has been to work toward a solution of the present conflict through negotiation rather than by military means. Canada has spared no efforts to this end.

Canada's relations with other countries of the Far East are also growing in importance. The arrival at the end of 1967 of Canada's first resident Ambassador in Bangkok aptly symbolized the developing political and economic links between Canada and Thailand. The Canadian Government has expressed its readiness to contribute to an international program for the economic rehabilitation of Viet-Nam after the end of hostilities and, as a member of the Asian Development Bank, has agreed to contribute to the Bank's technical assistance program and its Special Fund. Canada continues to be a substantial contributor to the Colombo Plan and to the United Nations agencies promoting economic development of Far Eastern countries.

Asian Development Bank.—Canada is a member of the Asian Development Bank, a regional development agency established in 1966 with Articles of Agreement patterned broadly after those of the World Bank and the other international financial institutions (see p. 139). The Bank's subscribed capital stock is \$970,000,000 (U.S.), of which one half is being paid in over the five-year period 1966 to 1970. The balance of member country subscriptions will remain as a callable guarantee against which the Bank may sell its bonds on world capital markets. Asian regional countries, including Japan, Australia and New Zealand, have subscribed \$615,000,000 (U.S.) and non-regional countries have subscribed the remaining \$355,000,000 (U.S.). Canada's subscription is \$25,000,000 (U.S.) of which three instalments of \$2,500,000 each have so far been paid toward the 50-p.c. paid-in portion.

For its ordinary operations, to be financed from paid-in equity capital or any resources raised on world capital markets, the Bank expects to follow a pattern similar to that of the World Bank and to lend at rates of interest related to the rate which the Bank itself would have to pay on any bond issues. The present lending rate (October 1968) has been set at 6½ p.c. As of September 1968, the Bank had made available loans to Thailand, Ceylon and Korea and a number of other projects were under active consideration.

The Bank is also authorized to establish Special Funds which may be provided to member countries on more flexible terms. Such special operations would be financed by voluntary contributions and kept separate and distinct from the Bank's ordinary capital resources. Canada has announced its intention to make available \$25,000,000 (U.S.) over a five-year period for the Bank's special operations.

Subsection 9.—Organization for Economic Co-operation and Development

The Organization for Economic Co-operation and Development (OECD) was established in September 1961 as successor to the OEEC, with Canada and the United States joining the countries of Western Europe as full members of the new body. Japan, previously a member of the Development Assistance Committee, became, in May 1964, a full member of the OECD and the first member from outside Western Europe or North America. Its headquarters are in Paris.

The prime purpose of the OECD is to promote among member governments co-operation in the fields of economic policy, trade and assistance to developing countries, although it also provides a valuable forum for discussion of common problems in agriculture, industry, finance, technology and manpower policy. At the first Ministerial Council in 1961, member countries approved a growth target of 50 p.c. for the decade to 1970; at the half-way mark in 1966, this goal had been considerably exceeded. Because of its development from the former OEEC, the Organization was at first concerned largely with questions of primarily European interest but, as its membership expanded, it has become increasingly a recognized forum for broader consultation among advanced industrial countries, particu-

larly on questions of economic and financial policy and on the problems of the developing countries. In this latter regard, the OECD now constitutes the main forum for consultations among developed countries concerning the work of the United Nations Conference on Trade and Development (UNCTAD) Trade and Development Board and its committees.

The OECD brings together government officials as well as representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, and provides for international liaison among such groups. Within Canada, liaison has been established with the business community through the Canadian Business and Industry Advisory Committee, which was established in 1962 and comprises representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturers' Association. Parallel arrangements exist for consultation with Canadian labour organizations.

Subsection 10.—Canadian External Aid Programs

The Colombo Plan.—The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, in January 1950. Although the Plan was initiated by Commonwealth governments, it is not exclusively a Commonwealth Program. It is designed to assist in the economic development and the raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership includes Cambodia, Canada, Ceylon, India, Indonesia, Iran, Japan, Korea, Laos, Malaysia, Maldiv Islands, Nepal, New Zealand, Pakistan, the Philippines, Singapore, Thailand, Viet-Nam and the United States; the latter is also engaged in a substantial program of economic aid in the same region. Iran and Singapore were admitted to membership in 1966.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year in one of the membership countries to review projects and exchange views on policy matters; the latest meeting was held in Rangoon in 1967. As a consultative body, it makes no collective policy decisions binding member countries; a Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Plan. At the 1959 meeting it was agreed to extend the Colombo Plan for another five years from June 1961, and it was similarly extended for a further five years at the 1964 meeting. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

From the inception of the Plan in 1950 through March 1968, Canada made available a total of \$982,402,600 in aid for capital and technical assistance projects in South and Southeast Asia. Although 18 countries are now receiving capital assistance from Canada, the largest contributions have so far been made to Ceylon, India, Malaysia and Pakistan. The Canadian contribution consists primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, power-generating plants, construction and fisheries projects and resources surveys, hospital equipment and cobalt therapy units, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs, such as industrial metals, asbestos, fertilizer, wheat, wheat flour and butter, from the internal sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program, up to March 1968, more than 4,400 persons from all countries in the area had come to Canada under Federal Government auspices for training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health education and social welfare. More than 500 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and

prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources-survey teams and on the installation and operation of capital equipment.

Commonwealth Caribbean Program.—In 1958, when the Federation of the West Indies was being formed, Canada undertook a five-year \$10,000,000 program of economic and technical assistance. Following the dissolution of the Federation in 1962, it was decided to continue providing assistance to its component territories—Jamaica, Trinidad and Tobago, Barbados, Guyana, British Honduras and the Leeward and Windward Islands—and, since then, \$59,380,000 in loans and grants has been made available to the area, including \$17,250,000 under the 1967-68 program.

Under this program, the area and its territories have been provided with two passenger-cargo ships for inter-island transportation, a deep-water wharf at St. Vincent, a residence for the University of the West Indies in Trinidad, port-handling equipment for five harbours and, for several of the smaller islands, schools, warehouses and freshwater supply facilities. Projects under way include a scheme for the expansion and improvement of Trinidad's dairy herds, the provision of rural schools in Jamaica, a prefabricated fish-packing plant, and assistance to the university in Guyana, and a five-year program concentrating aid to the Eastern Caribbean region in the fields of education, air transport, water development and agriculture.

A substantial amount of technical assistance has also been given. During the year ended Mar. 31, 1968, training programs were arranged in Canada for over 550 students from the Commonwealth Caribbean, the fields of study including agriculture, engineering, fisheries, forestry, medicine and public administration. In addition, 205 Canadians served in the Commonwealth Caribbean, including teachers, soil surveyors, and advisers in the fields of statistics, legal drafting, housing, films, radio broadcasting, postal services, Indian affairs, technical education and harbour management.

Special Commonwealth Africa Assistance Plan.—In the autumn of 1960 the Canadian Government undertook, subject to Parliamentary approval, to contribute \$10,500,000 to a Special Commonwealth Africa Assistance Plan (SCAAP) over a three-year period beginning Apr. 1, 1961. This program arose from discussions at the Meeting of Commonwealth Prime Ministers in 1960. Although entirely a Commonwealth scheme, SCAAP is essentially the counterpart in Africa of the Colombo Plan in Asia. The main donor countries are Britain, Canada, Australia and New Zealand. Some of the newer Commonwealth members, particularly India and Pakistan, have been able to provide limited amounts of technical assistance in fields in which they have experience and specialized knowledge. All Commonwealth countries and dependent territories in Africa qualify for development assistance under the SCAAP program.

As occurred in other areas of Canada's expanding aid program, the level of grant aid to SCAAP increased in 1967-68 to \$19,500,000 from \$12,500,000 in the previous fiscal year and development loans assistance remained at \$6,000,000. In 1965, the first Canadian development loan in Africa was extended to Nigeria in the amount of \$3,500,000 and, early in 1966, two loans totalling \$2,450,000 were granted to Tanzania. A \$2,000,000 food-aid grant in the form of wheat flour was made to Ghana.

Technical assistance programs continued to receive major emphasis. During 1967-68, more than 500 Canadian teachers, professors and technical experts were on assignment in Africa and 661 African students received academic and technical training in Canada. This represented a sharp increase in the program of technical assistance over the previous year.

Canadian capital assistance has concentrated on projects assigned a high priority by the recipient country and in which Canada has a high degree of expertise. These included aerial mapping and survey work, forest inventories, pulp and paper survey and forest products development, irrigation and land reclamation, medical training and wheat research, geological surveys and mineral exploration, and the provision of equipment for

schools and national parks. A major joint Canadian-Ghanaian effort was the building, equipping and staffing of the Trades Training Centre at Accra at an estimated cost to Canada of \$1,155,000.

The Commonwealth Scholarship and Fellowship Plan.—The proposal to establish a Commonwealth Scholarship and Fellowship Plan was made at the Trade and Economic Conference held at Montreal in September 1958. The Conference envisaged a scheme of 1,000 university scholarships, of which Britain undertook to provide one half and Canada one quarter. The details of the proposed scheme were worked out at the Commonwealth Education Conference at Oxford in 1959. This Plan was designed to enrich the intellectual life of each country of the Commonwealth by enabling an increased number of its brighter students to share in the wide range of educational resources available throughout the Commonwealth and thus promote the equality of educational opportunity at the highest level. During the academic year 1967-68, there were 204 Commonwealth scholars in Canada; since the Plan first became operational during 1960-61 a total of 746 scholars have come to Canada for advanced study.

In 1965, Research and Visiting Fellowships were introduced as part of the Canadian contribution to this Plan. In 1967, one Research Fellowship was awarded for a full academic year and six Visiting Fellowships for shorter periods. These Fellowships enable senior educationists from other Commonwealth countries to visit Canadian universities and other educational institutions to carry out investigations, study or research in their particular fields.

Assistance to French-Speaking States in Africa.—In April 1961 the Canadian Government announced an offer of assistance in the educational field to the French-speaking states in Africa and subsequently appropriated \$300,000 for this purpose for each of the years ended Mar. 31, 1962, 1963 and 1965. It was decided at the commencement of this program that emphasis should be placed on the provision of Canadian teachers for Africa. For the years ended Mar. 31, 1967 and 1968, aid was increased and for the latter an allocation of \$12,000,000 was provided to allow for development of a capital assistance program as well as expansion of technical assistance. During that year, 428 teachers and university professors served in French-speaking Africa and 310 students received training in Canada.

Early in 1968, a special Canadian Government mission, led by the Hon. Lionel Chevrier, visited some of the French-speaking countries of north and west Africa to look into their development needs and make recommendations for Canadian assistance. A number of projects were agreed to in principle involving a Canadian commitment of at least \$30,000,000 over a three-year period (additional to existing aid levels). Included were



The provision of an ambulance is part of Canada's assistance to the Malaysian Government to provide improved medical service for the Orang Asli aborigines.

Most of Canada's economic assistance to less-developed countries is granted under direct partnership arrangements between Canada and the governments concerned.

Canadian aid to the University of the West Indies in Trinidad included the gift of a residence, "Canada Hall".



A Canadian-built pilot launch operates at Bridgetown, Barbados. The eastern Caribbean region will benefit in the 1967-73 period from a concentration of Canadian assistance to air transport, education, water development and agriculture.



Surveying equipment used at irrigation and dam sites in Ghana is explained by Canadian technicians to new crew members. Canadian experts are sent to developing countries to help with the establishment and improvement of local facilities.



agricultural projects in Morocco and Tunisia, educational projects for the Ivory Coast, Senegal and Niger, and natural resources assistance to Algeria and Cameroon. Health projects were proposed for Morocco, Tunisia, Cameroon and Niger and power projects for Tunisia and the Ivory Coast.

Latin American Program.—A bilateral Canadian aid program for Latin America was initiated in December 1964, when the Canadian Government concluded an agreement with the Inter-American Development Bank (IADB) by which Canada allocated \$10,000,000 in 'soft' development loan funds for use in high-priority economic, technical and educational projects in Latin America. This allocation was augmented in 1965 by \$10,000,000 and in 1967-68 by a further \$20,000,000.

Under terms of the agreement, the IADB selects and processes proposed loan projects before submitting those considered suitable to the Canadian Government for its approval. By Mar. 31, 1968, 11 Canadian development loans totalling \$22,256,000 had been made available. They included the Port Authority of Acapulco, one of the main Pacific seacoast ports of the Central American Republic of El Salvador, which was granted an interest-free development loan of \$3,240,000 for the expansion and improvement of port facilities, and Canadian development loan funds of up to \$1,260,000 were made available to the Republic of Ecuador to finance a resources survey of 13,000 sq. miles of agricultural and forest land in that country's Guayas River Valley. Projects were also undertaken in Paraguay, Argentina, Bolivia, Mexico, Chile, Peru and Colombia, with emphasis on pre-investment and feasibility studies and the supplying of Canadian telecommunications, mining and industrial equipment.

Co-operation with the United Nations and its Specialized Agencies, and with other International Aid Programs.—In addition to the annual contributions made to the United Nations Development Program, which encompasses all United Nations programs of technical assistance, Canada arranges training programs in this country for individuals studying under the auspices of the different specialized agencies. This service is also extended to the technical assistance program of the International Co-operation Administration of the United States as well as to other international aid organizations. Up to Mar. 31, 1968, more than 2,200 individuals had come to Canada through the various agencies from more than 100 countries in all parts of the world. Assistance is also given by recruiting Canadians for service with the specialized agencies on specific technical assistance assignments in under-developed countries. Canadian allocation to multilateral organizations and agencies amounted to \$48,456,600 during 1967-68, making a cumulative total since 1951 of more than \$298,000,000.

Canadian International Development Agency.—Since 1960 the operation and administration of Canada's external assistance programs have been the responsibility of the External Aid Office, the name of which was changed in 1968 to the Canadian International Development Agency (CIDA), under the direction of a President.

As mentioned under the separate programs above, additional funds were made available for grant assistance in 1967-68. Canada also introduced a development loan program for which \$50,000,000 was authorized in 1965 by Parliament on a non-lapsing basis. The present fiscal period being reported upon is the fourth consecutive year in which this amount of money has been appropriated for development loan purposes. The terms of the loans are comparable with those of the International Development Association—up to 50 years maturity, non-interest-bearing, and a ten-year grace period.

In 1965, Parliament approved the establishment of a separate food-aid program under which the CIDA is able to purchase food products to meet part of the Canadian contributions to the FAO World Food Programme and to meet the needs of countries requesting this form of Canadian assistance. In 1968, Canada's contribution to the world's food needs totalled \$75,000,000. The continuing high level of this food aid program was considered necessary because of distress in Asia and parts of Africa due to crop failures, as well as continuing Canadian commitments to UN specialized agencies.

CHAPTER III.—POPULATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Census of Population

This Section presents in brief form the results of the limited census of population taken on June 1, 1966, with certain comparable data from earlier censuses. The 1966 Census did not include questions on ethnic origin, birthplace, religious denomination, language or mother tongue so that the 1961 data in Subsections 6 to 8 will remain the latest available until the taking of the comprehensive decennial census in 1971.

Detailed census data are published in a series of reports which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics. A list of these publications is available on request from the Information Division of the Dominion Bureau of Statistics.

Subsection 1.—Growth and Movement of Population*

Canada's population stood at 20,015,000 in 1966 as against 10,377,000 in 1931 and 5,371,000 in 1901. In the first decade of the century, when the West was being opened up for settlement, the gain of 34 p.c. was greater than in any other censal period. During that decade, about 1,760,000 immigrants entered the country and natural increase amounted to an estimated 1,000,000. However, since the total increase in population was 1,835,328, it is evident that a substantial number of people left the country during the period. In the 1911-21 decade, population growth dropped to 22 p.c. Military losses in the First World War and losses during the influenza epidemic, which together amounted to about 120,000, were factors in this decline. Although the flow of immigrants was reduced during the war years, it had been very heavy immediately preceding the War, so that the total

* An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census, Vol. X of the 1951 Census, and Bulletin 7.1-1 of the 1961 Census.

number for the period (1,612,000) was very close to that for the previous censal period. At the same time, emigration was again extremely high and the increase in population amounted to 1,581,306, being an average of 2 p.c. a year compared with 3 p.c. in the 1901-11 period.

In the decade 1921-31, the rate of increase dropped to 18 p.c. Immigration fell to 1,200,000 and emigration was estimated at 1,000,000. Thus the increase in population, which amounted to 1,588,837, was only 229,000 greater than the natural increase. A feature of this period was the rapid growth of population in Western Canada, partly the result of immigration and partly the result of an influx of people from Eastern Canada. During 1931-41, the population increase was just under 11 p.c. During the depressed conditions of the 1930s, marriage and birth rates were significantly lower and only 150,000 immigrants came to Canada, although, in addition, 75,000 Canadians returned from the United States. Emigration was also much lower than in the previous decades, amounting to an estimated 250,000. Natural increase was only 1,220,000, the crude birth rate falling from 27 per thousand of the population in the 1921-25 period to 24 per thousand in the succeeding five-year period and to 20 per thousand during much of the 1931-41 decade. During 1941-51, population growth was restored to pre-depression levels. Excluding Newfoundland which became part of Canada in 1949, it amounted to 19 p.c.; including Newfoundland it was 22 p.c. Much of the increase took place in the second half of the decade, reflecting heavy postwar immigration and sharp increases in the marriage and birth rates.

In the 1951-61 period, the population growth rate at 30 p.c. came close to approaching the extremely high rate of the first decade of the century. However, the two periods contrast in many ways. In the early period there was a wider dispersal of population increases as whole regions across the Continent were opened up; in the recent period there was a concentration of growth in urban communities although some spreading of population into newly developed northern areas took place. Natural increase accounted for about 75 p.c. of the growth. Although there was some decline in the death rate, the trend of natural increase reflected very closely that of the crude birth rate which began to rise during the War and remained high throughout the period. Net immigration accounted for the remainder of the increase; during the decade, 1,542,853 immigrants entered the country, more than double the estimated emigration. All provinces gained in population during 1951-61 but their rates of increase varied widely. The greatest increases resulted from a combination of natural increase and net migration which in the two large provinces of Central Canada and the two most westerly provinces accounted for over 87 p.c. of the total actual increase. In contrast, increases in the other six provinces were entirely accounted for by natural increase.

Canada showed a declining rate of population growth over the three five-year periods between 1951 and 1966. In the first period, 1951-56, an outstanding development of economic resources was experienced and, reflecting this expansion, population growth continued at a high level. Slightly more than 2,000,000 persons were added to the population in this period, a 14.5-p.c. increase. Similarly, the 1956-61 period showed a quinquennial rate of increase of 13.4 p.c., corresponding to a numerical increase of 2,157,000. In the 1961-66 period, however, the rate fell to 9.7 p.c., largely caused by a marked downturn in the crude birth rate. The actual number of births declined from 2,362,000 in 1956-61 to 2,249,000 in 1961-66 and immigration, as well, fell off from 760,000 to 550,000. It should be noted, however, that immigration increased each year after the low point of 1961; in 1966 it reached a total of 194,743, more than two and a half times the 1961 figure.

Provincial rates of growth in the 1961-66 period varied due to differences in rates of natural increase and migration among the provinces. Comparing the provinces in order of rate of growth over this period, the population of British Columbia showed an increase of 244,592 or 15 p.c. (roughly 3 p.c. per annum), largely attributable to a net in-migration

of 140,000; this was the only province where the rate of growth due to migration (57 p.c.) exceeded that due to natural increase (43 p.c.). Ontario recorded an increase of 11.6 p.c. between 1961 and 1966, when 724,778 persons were added to its population. Natural increase accounted for 67 p.c. of the total increase. The in-flow of immigrants was the heaviest among the provinces as more than one half of all immigrants in the five-year period gave Ontario as their province of destination.

Population growth in Quebec and Alberta, at 9.9 p.c. and 9.8 p.c., respectively, corresponded closely with the Canada rate. Natural increase in Quebec accounted for close to 88 p.c. of the total and Quebec was the only province other than Ontario and British Columbia to show an increase in net migration in this period. Newfoundland ranked fifth among the provinces in rate of growth, with an increase of 35,543 persons or 7.8 p.c. The remaining provinces all showed rates of growth of less than 1 p.c. per annum, Nova Scotia ranking last with a rate of 2.6 p.c. over the five years. Yukon Territory showed a slight decrease in population in the 1961-66 period (-1.7 p.c.) but in the Northwest Territories the growth rate, at 25.0 p.c., was above the provincial figures.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Census Years 1921-66

NOTE.—Populations for the decennial census years 1871 to 1911 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131.

Province or Territory	1921	1931	1941	1951	1956	1961	1966
NUMERICAL DISTRIBUTION							
Nfld.....	1	1	1	361,416	415,074	457,853	493,396
P.E.I.....	88,615	88,038	95,047	98,429	99,285	104,629	108,535
N.S.....	523,837	512,846	577,962	642,584	694,717	737,007	756,039
N.B.....	387,876	408,219	457,401	515,697	554,616	597,936	616,788
Que.....	2,360,510	2,874,662	3,331,882	4,055,681	4,628,378	5,259,211	5,780,845
Ont.....	2,933,662	3,431,683	3,787,655	4,597,542	5,404,933	6,236,092	6,960,870
Man.....	610,118	700,139	729,744	776,541	850,040	921,686	963,066
Sask.....	767,510	921,785	895,992	831,728	880,665	925,181	955,344
Alta.....	588,454	731,605	796,169	939,501	1,123,116	1,331,944	1,463,203
B.C.....	524,582	694,263	817,861	1,165,210	1,398,464	1,629,082	1,873,674
Y.T.....	4,157	4,230	4,914	9,096	12,190	14,628	14,382
N.W.T.....	8,143	9,316	12,028	16,004	19,313	22,998	28,738
Canada.....	8,787,949²	10,376,786	11,506,655	14,009,429	16,080,791	18,238,247	20,014,880
PERCENTAGE CHANGE FROM PRECEDING CENSUS							
Nfld.....	1	1	1	1	14.8	10.3	7.8
P.E.I.....	-5.5	-0.7	8.0	3.6	0.9	5.4	3.7
N.S.....	6.4	-2.1	12.7	11.2	8.1	6.1	2.6
N.B.....	10.2	5.2	12.0	12.7	7.5	7.8	3.2
Que.....	17.7	21.8	15.9	21.7	14.1	13.6	9.9
Ont.....	16.1	17.0	10.4	21.4	17.6	15.4	11.6
Man.....	32.2	14.8	4.2	6.4	9.5	8.4	4.5
Sask.....	53.8	21.7	-2.8	-7.2	5.9	5.1	3.3
Alta.....	57.2	24.3	8.8	18.0	19.5	18.6	9.9
B.C.....	33.7	32.3	17.8	42.5	20.0	16.5	15.0
Y.T.....	-51.2	1.8	16.2	85.1	34.0	20.0	-1.7
N.W.T.....	25.1	14.4	29.1	33.1	20.7	19.1	25.0
Canada.....	21.9	18.1	10.9	21.8	14.8	13.4	9.7

¹ Populations of Newfoundland (not part of Canada until 1949) were: 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819.

² Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

2.—Factors in the Growth of Population, 1961-66

Province or Territory	Population 1961 Census	Births	Deaths	Natural Increase	Immigration	Actual Increase	Net Migration	Population 1966 Census
	No.	No.	No.	No.	No.	No.	No.	No.
Nfld.....	457,853	75,251	15,674	59,577	2,256	35,543	-24,034	493,396
P.E.I.....	104,629	13,577	5,071	8,506	466	3,906	-4,600	108,535
N.S.....	737,007	91,138	31,612	59,526	6,241	19,032	-40,494	756,039
N.B.....	597,936	76,943	23,714	53,229	4,460	18,852	-34,377	616,788
Que.....	5,259,211	646,621	188,904	457,717	122,897	521,634	+63,917	5,780,845
Ont.....	6,236,092	752,511	264,659	487,852	287,054	724,778	+236,926	6,960,870
Man.....	921,686	108,858	38,518	70,340	15,433	41,380	-28,960	963,066
Sask.....	925,181	112,249	36,558	75,691	8,988	30,163	-45,528	955,344
Alta.....	1,331,944	181,753	47,146	134,607	29,394	131,259	-3,348	1,463,203
B.C.....	1,629,082	181,467	77,364	104,103	60,822	244,592	+140,489	1,873,674
Y.T. and N.W.T..	37,626	8,394	1,649	6,745	544	5,494	-1,251	43,120
Canada.....	18,238,247	2,248,762	730,869	1,517,893	538,555	1,776,633	+258,740	20,014,880

Table 3 shows the natural increase and the total population increase for Canada and the provinces in the periods 1951-56, 1956-61 and 1961-66. The balance between the total increase in population and the natural increase during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for the provinces indicate the net movement of population arising partly from interchange of population between provinces and partly from persons entering and leaving the country.

3.—Changes in Provincial Population Size through Natural Increase and Migration, 1951-56, 1956-61 and 1961-66

Province	Population Increase according to Census			Natural Increase			Net Migration		
	1951-56	1956-61	1961-66	1951-56	1956-61	1961-66	1951-56	1956-61	1961-66
Newfoundland.....	53,658	42,779	35,543	51,851	59,145	59,577	+1,807	-16,366	-24,034
Prince Edward Island...	856	5,344	3,906	8,959	8,662	8,506	-8,103	-3,318	-4,600
Nova Scotia.....	52,133	42,290	19,032	63,133	65,160	59,526	-11,000	-22,870	-40,494
New Brunswick.....	38,919	43,320	18,852	59,774	59,687	53,229	-20,855	-16,367	-34,377
Quebec.....	572,697	630,833	521,634	476,627	521,673	457,717	+96,070	+109,160	+63,917
Ontario.....	807,391	831,159	724,778	430,386	523,107	487,852	+377,005	+308,052	+236,926
Manitoba.....	73,499	71,646	41,380	73,684	76,006	70,340	-185	-4,360	-28,960
Saskatchewan.....	48,937	44,516	30,163	86,030	86,294	75,691	-37,093	-41,778	-45,528
Alberta.....	183,615	208,823	131,259	120,961	144,234	134,607	+62,654	+64,594	-3,348
British Columbia.....	233,254	230,618	244,592	98,206	125,585	104,103	+135,048	+105,033	+140,489
Canada¹.....	2,071,362	2,157,456	1,776,633	1,473,211	1,674,987	1,517,893	+598,151	+482,469	+258,740

¹ Includes the Yukon and Northwest Territories.

RECENT TRENDS IN URBANIZATION AND METROPOLITAN GROWTH*

All cities, towns and villages of 1,000 or more population, whether incorporated or not, were classed as urban in the 1966 Census; also classed as urban were the urbanized fringes of these centres, where the population of the city or town together with its urbanized fringe amounted to 10,000 or more and where the density of the fringe was at least 1,000 persons per square mile. The remainder of the population living outside of the urban centres and suburban fringes was classed as rural.

* Prepared by Leroy O. Stone, Consultant on Demographic Research, Dominion Bureau of Statistics, and Frances Aubry, Technical Officer.

Table 4 shows that, by 1966, close to 74 p.c. of the population of Canada lived in urban areas, according to the census definition. The degree of urbanization in the provinces, as measured by the portion classified as urban, ranged from 80 p.c. in Ontario to 37 p.c. in Prince Edward Island. However, although almost three quarters of the Canadian population was urbanized, only three of the ten provinces had surpassed this level of urbanization—Ontario with its 80 p.c., Quebec with 78 p.c. and British Columbia with 75 p.c. Of the seven remaining provinces, five were over 50 p.c. urbanized—Newfoundland, Nova Scotia, New Brunswick, Manitoba and Alberta.

In Table 4 the rural populations of the provinces are further classified as rural non-farm or rural farm. For census purposes, persons living on holdings of one or more acres with sales of agricultural products of \$50 or more in the previous year, are classed as residing in rural farm areas. Thus, the population living on "farms" would include some persons not connected with farming operations and who derived their income from non-agricultural pursuits. In 1966, among the provinces, Saskatchewan and Prince Edward Island had the highest percentages of rural farm population—29 p.c. and 28 p.c., respectively.

4.—Number and Percentage of the Population classified as Urban and Rural (Non-farm and Farm), by Province, Census 1966

Province or Territory	Urban		Rural						Total Popula- tion
			Non-farm		Farm		Total		
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.
Newfoundland.....	266,689	54.1	218,252	44.2	8,455	1.7	226,707	45.9	493,396
Prince Edward Island.....	39,747	36.6	37,947	35.0	30,841	28.4	68,788	63.4	108,535
Nova Scotia.....	438,907	58.1	271,881	36.0	45,251	6.0	317,132	41.9	756,039
New Brunswick.....	312,225	50.6	253,059	41.0	51,504	8.4	304,563	49.4	616,788
Quebec.....	4,525,114	78.3	762,164	13.2	493,567	8.5	1,255,731	21.7	5,780,845
Ontario.....	5,593,440	80.4	885,735	12.7	481,695	6.9	1,367,430	19.6	6,960,870
Manitoba.....	646,048	67.1	157,146	16.3	159,872	16.6	317,018	32.9	963,066
Saskatchewan.....	468,327	49.0	207,375	21.7	279,642	29.3	487,017	51.0	955,344
Alberta.....	1,007,407	68.8	178,198	12.2	277,598	19.0	455,796	31.2	1,463,203
British Columbia.....	1,410,493	75.3	377,984	20.2	85,197	4.5	463,181	24.7	1,873,674
Yukon Territory.....	6,828	47.5	7,492	52.1	62	0.4	7,554	52.5	14,382
Northwest Territories.....	11,534	40.1	17,174	59.8	30	0.1	17,204	59.9	28,738
Canada.....	14,726,759	73.6	3,374,407	16.9	1,913,714	9.6	5,288,121	26.4	20,014,880

The continued advances in the level of Canadian urbanization from 1851 to 1966 are shown in Table 5. During that period, the portion of the national population residing in urban centres increased almost sixfold from 13.1 p.c. to 73.6 p.c., having more than doubled since the turn of the present century. The urban influence in Canadian communities in 1966 is indicated only partially by the 73.6-p.c. level of urbanization. This figure is based upon the demographic conception of the term "urban"—the urban population residing in densely built-up areas, each having a given minimum population. A portion of the population classified as rural non-farm in the 1966 Census consisted of persons who commuted to work-places located within the recognized urban centres. Still more persons classified as rural-area residents had occupations and styles of living far removed from those of traditional rural society.

The level of urbanization in Canada, which was less than 15 p.c. in 1851, increased by about three percentage points in each of the next two decades, and in each of the following three decades accelerated up to nearly five percentage points, so that by 1901 the degree of urbanization was about 35 p.c. The acceleration continued and by 1931 the level of urbanization had passed 50 p.c. but during the generally depressed 1931-41 decade the rate of increase fell sharply, amounting to only about three percentage points. Then,

in the following two decades the rates of advance were at a record level since 1851. A seven-percentage-point increase was shown in 1901-11, 1941-51 and 1951-61 and in the 1961-66 period the level of urbanization advanced another 3.9 percentage points.

Ontario, Quebec and British Columbia have been the most highly urbanized of the major Canadian regions in every census since 1881; before 1881 the Maritimes were probably more highly urbanized than British Columbia. Since 1881 the differential in level of urbanization between that of the group of Ontario, Quebec and British Columbia and that of the Maritimes has widened. The differential between the same group and the Prairie region widened from 1901 to 1941 but has narrowed markedly since then as a result of the sharp upturn in the advance of urbanization in the Prairies. The differences in the levels of urbanization among the three most highly urbanized of the major regions have generally narrowed since 1881, which was the first year British Columbia had a level of urbanization similar to that of Central Canada.

Historically, the Maritime region is one of the oldest regions of Canada and may have been the most highly urbanized of the major regions some time in the eighteenth century. By 1851, however, it was slightly less urbanized than Quebec and Ontario and has shown a much lower level of urbanization than the two central provinces ever since. The long-time curve of the percentage of urban population in the Maritimes shows a pattern of undulations roughly similar to those of Ontario and Quebec but upward surges were not sustained in the Maritimes to the same extent as in Ontario and Quebec; as a result, there was a general widening of the differential between the Maritime and the central provinces between 1851 and 1961, which became prominent mainly after 1921.

There was also a marked widening of the differential in level of urbanization between the Prairie region and Central Canada following the great wave of western settlement that took place between 1896 and 1914. For the decades ended 1921, 1931 and 1941, the level of urbanization in the Prairie region increased very slowly. Thus, while the central provinces were urbanizing rapidly from 1911 to 1941, when Ontario's level increased from 50 p.c. to 68 p.c. and Quebec's increased from 44 p.c. to 61 p.c., urbanization in the Prairies advanced only from 28 p.c. to 32 p.c. However, following the relatively depressed 1931-41 decade, which was particularly severe in the Prairies, the advance of Prairie urbanization accelerated very sharply and in the 1951-61 decade continued to climb rapidly. Over the whole 25-year period from 1941 to 1966 the level of Prairie urbanization advanced from 32 p.c. to 63 p.c. in contrast with an increase of just four percentage points in the 30 years from 1911 to 1941. Urbanization in each Prairie Province increased by at least 22 percentage points between 1941 and 1966, Alberta leading with an increase of 37.

5.—Percentage of Population in Urban Areas, by Province, 1851 to 1966

SOURCE: *Urban Development in Canada*, by Leroy O. Stone, 1961 Census Monograph, Table 2.2.

Province	1851	1861	1871	1881	1891	1901	1911
Newfoundland.....	...	...	...	...	...	...	...
Maritime Provinces.....	9.0	9.9	11.9	15.3	18.8	24.5	30.9
Prince Edward Island.....	—	9.8	9.4	10.6	18.1	14.6	16.0
Nova Scotia.....	7.5	7.6	8.3	14.7	19.4	27.7	36.7
New Brunswick.....	14.0	18.1	17.6	17.6	19.9	23.1	26.7
Quebec.....	14.9	16.6	19.9	23.8	28.6	36.1	44.5
Ontario.....	14.0	18.5	20.6	27.1	35.0	40.3	49.5
Prairie Provinces.....	...	...	...	...	...	19.3	27.9
Manitoba.....	...	...	—	14.9	25.3	24.9	39.3
Saskatchewan.....	...	...	...	...	...	6.1	16.1
Alberta.....	...	...	...	...	...	16.2	29.4
British Columbia.....	—	—	9.0	18.3	42.6	46.4	50.9
Canada (incl. Newfoundland).....	...	...	...	...	...	...	...
Canada (excl. Newfoundland).....	13.1	15.8	18.3	23.3	29.8	34.9	41.8

5.—Percentage of Population in Urban Areas, by Province, 1851 to 1966—concluded

Province	1921	1931	1941	1951	1956	1961	1966
Newfoundland.....	...	...	...	43.3	45.0	50.7	54.1
Maritime Provinces.....	38.8	39.7	44.1	47.4	50.4	49.5	53.4
Prince Edward Island.....	18.8	19.5	22.1	26.1	30.7	32.4	36.6
Nova Scotia.....	44.8	46.6	52.0	54.5	67.0	54.3	58.1
New Brunswick.....	55.2	55.4	58.7	42.8	45.8	46.5	50.6
Quebec.....	51.8	59.5	61.2	66.8	70.0	74.3	78.3
Ontario.....	58.8	63.1	67.5	72.5	75.3	77.3	80.4
Prairie Provinces.....	28.7	31.3	32.4	44.5	51.2	57.6	62.7
Manitoba.....	41.5	45.2	46.7	56.0	59.6	63.9	67.1
Saskatchewan.....	16.8	20.3	21.5	30.4	36.6	43.0	49.0
Alberta.....	30.7	31.8	31.9	47.6	56.4	63.3	68.8
British Columbia.....	50.9	62.3	64.0	68.6	71.9	72.6	75.3
Canada (incl. Newfoundland).....	...	...	...	62.4	66.3	69.7	73.6
Canada (excl. Newfoundland).....	47.4	52.5	55.7	62.9	66.9	70.2	74.1

The urban population is being concentrated increasingly in centres of at least 100,000 in size. As early as 1951, 59.2 p.c. of the urban population resided in such centres and in 1966 the proportion had risen to 64.3 p.c.; in the latter year, almost 40 p.c. lived in centres of 500,000 or over. A concomitant trend is the decreasing percentage of urban population residing in centres of under 10,000, which dropped from 19.5 p.c. in 1951 to 15.8 p.c. in 1966.

6.—Distribution of the Urban Population by City Size-Group, Census Years 1951-66

NOTE.—1951, 1956 and 1961 figures are based on the 1956 definition as explained in the 1961 Census Bulletin 7.1-2, Table V; 1966 figures are as published in the 1966 Census.

Size Group	1951		1956		1961		1966	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
500,000 and over.....	2,939,295	33.3	3,519,086	32.8	4,570,003	35.2	5,870,631	39.9
100,000—499,999.....	2,282,662	25.9	2,706,853	25.3	3,730,846	28.8	3,598,673	24.4
30,000—99,999.....	1,230,731	14.0	1,471,440	13.7	1,535,602	11.8	1,786,220	12.1
10,000—29,999.....	645,203	7.3	1,020,830	9.5	984,370	7.6	1,154,972	7.8
5,000—9,999.....	553,162	6.3	649,708	6.1	657,036	5.1	700,289	4.8
1,000—4,999.....	1,166,584	13.2	1,346,938	12.6	1,494,070	11.5	1,615,974	11.0
Totals.....	8,817,637	100.0	10,714,855	100.0	12,971,927	100.0	14,726,759	100.0

A major aspect of the increasing concentration of urban population into a relatively few large agglomerations is the development of metropolitan areas. A metropolitan area is a geographically small region centred economically upon a large city and containing a number of additional cities, towns and unincorporated urban settlements whose economies are closely linked with that of the large central city. Following are the areal components of the 1966 Census Metropolitan Areas.

*Census Metropolitan Areas and Components¹***Calgary—²**

Calgary, c.

Edmonton—

Edmonton, c.
St. Albert, t.
Strathcona, County No. 20 (pt.)
84. Stony Plain, mun. (pt.)
90. Sturgeon, mun. (pt.)

Halifax—

Halifax, c.
Dartmouth, c.
Halifax, mun. (pt.)
Armdale
Bedford and Waverley
Cole Harbour and Eastern Passage
Herring Cove and Spryfield
North Dartmouth
Rockingham
Indian Reserves

Hamilton—

Hamilton, c.
Ancaster, twp.
Beverly, twp.
Binbrook, twp.
Burlington, t.
Dundas, t.
Flamborough E., twp.
Flamborough W., twp.
Glanford, twp.
Saltfleet, twp.
Stoney Creek, t.
Waterdown, vl.

Kitchener—

Kitchener, c.
Waterloo, c.
Ayr, vl.
Bridgeport, vl.
Dumfries N., twp.
Galt, c.
Hespeler, t.
Preston, t.
Waterloo, twp.

London—

London, c.
London, twp.
Westminster, twp.

Montreal—

Île-de-Montréal
Montréal, (Ville de), c.
Anjou, t.
Baie d'Urfé, t.
Beaconsfield, c.
Côte St. Luc, c.
Dollard des Ormeaux, t.
Dorval, c.
Hampstead, t.
Île Dorval, t.
Kirkland, t.
Lachine, c.
LaSalle, c.
Montréal E., t.
Montréal N., c.
Montréal W., t.
Mount Royal, t.
Outremont, c.

Montreal—concluded

Île-de-Montréal—concluded
Pierrefonds, c.
Pointe aux Trembles, c.
Pointe Claire, c.
Roxboro, t.
Ste. Anne de Bellevue, t.
Ste. Geneviève, t.
St. Jean de Dieu, mun.
St. Laurent, c.
St. Léonard, c.
St. Michel, c.
St. Pierre, t.
St. Raphaël del'Île-Bizard, mun.
Senneville, vl.
Verdun, c.
Westmount, c.

Île-Jésus

Laval, (Ville de), c.
Chambly (pt.)
Boucherville, t.
Greenfield Park, t.
Jacques-Cartier, c.
Lafèche, c.
LeMoynes, t.
Longueuil, c.
Prévile, t.
St. Bruno de Montarville, t.
St. Hubert, t.
St. Lambert, c.

Châteauguay (pt.)

Châteauguay, t.
Châteauguay Centre, t.
Châteauguay Heights, t.
Léry, t.

Deux Montagnes (pt.)

Deux Montagnes, c.
St. Eustache, t.

Laprairie (pt.)

Brossard, t.
Candiac, t.
Delson, t.
La Prairie, t.
Notre Dame, mun.
Ste. Catherine d'Alexandrie de Laprairie, mun.
St. Constant, mun.
Indian Reserves

L'Assomption (pt.)

Charlemagne, vl.

Repentigny, t.**Terrebonne (pt.)**

Rosemere, t.
Ste. Thérèse, c.

Vaudreuil (pt.)

Dorion, t.
Île Perrot, t.
N. D. de l'Île Perrot, mun.
Pincourt, t.
Pointe du Moulin, t.
Terrasse-Vaudreuil, mun.

Ottawa—

Carleton (pt.)
Ottawa, c.
Eastview, c.³
Gloucester, twp.
Nepean, twp.
Rockcliffe Park, vl.
Hull (pt.)
Hull, c.
Gatineau, t.
Pointe Gatineau, t.
Templeton, vl.
Templeton W., mun.
Gatineau (pt.)
Aylmer, t.

Ottawa—concluded

Gatineau (pt.)—concluded
Deschênes, vl.
Lucerne, mun.

Quebec—

Quebec (pt.)
Quebec, c.
Beauport, c.
Beauport W., mun.
Charlesbourg, c.
Charlesbourg E., mun.
Charlesbourg W., mun.
Courville, t.
Duberger, t.
Giffard, c.
L'Ancienne-Lorette, mun.
Les Saules, t.
Loretteville, c.
Montmorency, t.
Neuchâtel, t.
N. D. de Lorette, vl.
Orsainville, t.
St. Emile, vl.
St. Félix du Cap Rouge, mun.
Ste. Foy, c.
St. Michel Archange, mun.
Ste. Thérèse de Lisieux, mun.
Sillery, c.
Vanier, t.
Villeneuve, t.
Indian Reserves
Lévis (pt.)
Charny, t.
Lauzon, c.
Lévis, c.
St. David de l'Auberivière, t.
St. Nicolas, t.
St. Romuald d'Etchemin, c.

Regina—³

Regina, c.

St. John's—

St. John's, c.
Mount Pearl, t.
St. John's Area
Freshwater Bay
Goulds
Higgins Line
Kanes Valley
Logy Bay
Mount Scio

Saint John—

St. John (pt.)
Saint John, c.
Lancaster, c.
Lancaster, par.
Simonds, par.
Kings (pt.)
East Riverside-Kingshurst, l.i.d.
Fair Vale, l.i.d.
Gondola Point, l.i.d.
Pamdenec, l.i.d.
Quispamsis, l.i.d.
Rothesay, par.
Rothesay, t.
Westfield, par.
Westfield, l.i.d.

For footnotes, see end of table.

*Census Metropolitan Areas and Components¹—concluded***Saskatoon—²**
Saskatoon, c.**Sudbury—**

Sudbury, c.
Blezard, twp.
Chelmsford, t.
Coniston, t.
Copper Cliff, t.
Lively, t.
Neelon & Garson, twp.
Rayside, twp.
Waters, twp.
Unorganized

Toronto—

York (pt.)
Toronto, c.
Etobicoke, twp.
Forest Hill, vl.
Leaside, t.
Long Branch, vl.
Markham, twp.
Markham, vl.
Mimico, t.
New Toronto, t.
Richmond Hill, t.
Scarborough, twp.
Stouffville, vl.
Swansea, vl.
Vaughan, twp.
Weston, t.
Woodbridge, vl.
York, twp.

Toronto—concluded

York (pt.)—concluded
York E., twp.
York N., twp.
Halton (pt.)
Milton, t.
Oakville, t.
Ontario (pt.)
Ajax, t.
Pickering, twp.
Pickering, vl.
Peel (pt.)
Port Credit, t.
Streetsville, t.
Toronto, twp.

Vancouver—

Vancouver, c.
Burnaby, mun.
Coquitlam, mun.
Delta, mun.
Fraser Mills, mun.
New Westminster, c.
North Vancouver, c.
North Vancouver, mun.
Port Coquitlam, c.
Port Moody, c.
Richmond, mun.
Surrey, mun.
University Endowment Area
West Vancouver, mun.
White Rock, c.
Unorganized
Indian Reserves

Victoria—

Victoria, c.
Central Saanich, mun.
Esquimalt, mun.
North Saanich, mun.
Oak Bay, mun.
Saanich, mun.
Sidney, vl.
Unorganized
Indian Reserves

Windsor—

Windsor, c.
St. Clair Beach, vl.
Sandwich S., twp.
Sandwich W., twp.
Tecumseh, t.

Winnipeg—

Winnipeg, c.
Assiniboia, mun.
Brooklands, t.
Charleswood, mun.
East Kildonan, c.
Fort Garry, mun.
Kildonan N., mun.
Old Kildonan, mun.
St. Boniface, c.
St. James, c.
St. Paul E., mun.
St. Paul W., mun.
St. Vital, c.
Transcona, c.
Tuxedo, t.
West Kildonan, c.

¹ c.=city; t.=town; vl.=village; mun.=municipality; par.=parish; twp.=township; l.i.d.=local improvement district.

² Same boundaries for city and census metropolitan area.

^{*} Vanier City Jan. 1, 1969.

Two of the Census Metropolitan Areas exceeded 2,000,000 in population in 1966—Montreal MA with 2,437,000 and Toronto MA with 2,158,000. Vancouver MA was not far from the 1,000,000-mark with 892,000 persons and Winnipeg MA was the only other MA with more than 500,000 persons. Other MAs with at least 400,000 persons were Edmonton (401,000), Hamilton (449,000), Ottawa (495,000) and Quebec (413,000). Smallest among the 1966 Census MAs were Saint John and St. John's, each with about 100,000 persons.

Over the period 1961-66, the 1966 Census MAs grew at a combined rate of 15.1 p.c. (with areas held constant), much higher than the national growth rate of 9.7 p.c. Particularly rapid rates were shown by Kitchener (24.2 p.c.), Calgary (18.5 p.c.), Edmonton (18.9 p.c.) and Toronto (18.3 p.c.). In contrast, Halifax (7.8 p.c.), Saint John (5.9 p.c.), Winnipeg (6.8 p.c.) and Windsor (9.5) had growth rates below the national figure.

Taken as a group, the 1966 Census MAs have consistently outpaced Canada as a whole in population growth rate. Table 8 shows that in 1966 one half of Canada's population resided in these MAs, whereas in 1901 an area closely approximating these MAs contained only one quarter of the national population; thus, over the 1901-66 period, the area of 1966 MAs had a population growth rate roughly twice as high as that of Canada as a whole. In 1966, more than one half of the populations of Quebec, Ontario and British Columbia resided in the MAs.

7.—Populations of Census Metropolitan Areas, Census Years 1951, 1956, 1961 and 1966, with Percentage Increases

Metropolitan Area	Population				Percentage Increases		
	1951	1956	1961	1966	1951-56 ¹	1956-61 ¹	1961-66 ²
	No.	No.	No.	No.			
Calgary.....	139,105	200,449	279,062	330,575	41.2	38.8	18.5
Edmonton.....	173,075	251,004	337,568	401,299	44.1	32.5	18.9
Halifax.....	133,931	184,200	183,946	198,193	22.6	12.0	7.8
Hamilton.....	259,685	327,831	396,189	449,116	20.7	16.8	13.6
Kitchener.....	107,474	128,722	154,864	192,275	19.8	20.3	24.2
London.....	121,516	154,453	181,283	207,396	19.8	17.4	14.4
Montreal.....	1,395,400	1,620,758	2,108,509	2,436,817	18.6	20.9	15.4
Ottawa.....	281,908	345,460	429,750	494,535	18.1	24.4	15.1
Quebec.....	274,827	309,959	357,568	413,397	12.8	14.8	15.6
Regina.....	71,319	89,755	112,141	131,127	25.8	24.9	16.9
Saint John.....	78,337	86,015	95,563	101,192	9.8	11.1	5.9
St. John's.....	67,749	77,901	90,838	101,161	15.4	14.8	10.4
Saskatoon.....	53,268	72,858	95,526	115,892	29.4	31.1	21.3
Sudbury.....	73,826	87,945	110,694	117,075	32.7	13.0	5.7
Toronto.....	1,117,470	1,358,028	1,824,481	2,158,496	24.1	21.4	18.3
Vancouver.....	530,728	665,017	790,165	892,286	18.3	18.8	12.9
Victoria.....	104,303	125,447	154,152	173,455	18.2	15.2	12.5
Windsor.....	157,672	185,865	193,365	211,697	13.6	4.0	9.5
Winnipeg.....	354,069	409,121	475,989	508,759	15.5	15.5	6.8
All MAs.....	5,495,662	6,670,878	8,371,653	9,634,743	20.9	20.1	15.0

¹ On 1961 area.² On 1966 area.

8.—Percentage of Population in the Principal Regions of Metropolitan Development, by Major Region, Census Years 1961 to 1966

NOTE.—Regions of metropolitan development are areas that closely approximate the boundaries of the 1961 Census MAs, as explained in the 1961 Census Monograph *Urban Development in Canada*, Table 6.2.

Region	1961	1961	1961	1961	1961	1961	1966	1961	1966
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Maritimes.....	11.4	11.9	13.7	14.0	15.0	16.9	18.6	19.4	19.8
Quebec ¹	33.1	38.3	41.4	46.0	44.7	45.4	46.9	49.5	52.1
Ontario ¹	28.2	35.3	42.4	46.9	48.0	50.2	52.3	54.2	56.5
Prairies.....	18.0	23.1	23.5	26.2	27.1	33.5	37.9	42.5	45.4
British Columbia.....	—	—	54.8	58.8	58.7	58.7	57.7	58.5	57.4
Canada².....	26.0	30.5	35.4	39.5	40.2	43.3	45.7	48.3	50.6

¹ Because Ottawa MA is partly in Ontario and partly in Quebec, Hull County in Quebec has been allocated to the Ontario total.

² Excludes Newfoundland, Yukon Territory and Northwest Territories.

The differential in growth rate between the MAs and Canada as a whole is largely attributable to migration. In the 1950s and 1960s, the MAs had moderately high rates of net in-migration, as shown in Tables 9 and 10. In 1961-66, high rates of net in-migration were shown by the MAs that grew most rapidly, while the MAs that grew least rapidly actually sustained net out-migration. By migration alone, Kitchener MA grew 14.9 p.c. and Toronto MA grew 9.9 p.c. between 1961 and 1966.

The 1961 Census provided the first series of statistics separating in-migration from out-migration for the MAs, in regard to *internal* migration. Table 10 shows that the MAs with relatively high in-migration rates also tended to have relatively high out-migration rates, and that relatively low rates of in-migration were roughly associated with relatively low out-migration rates.

9.—Net Migration Ratios for the Principal Regions of Metropolitan Development, 1921-31 to 1951-61

SOURCE: 1961 Census Monograph *Urban Development in Canada*, Table 6.4

Region	Net Migration Ratios			
	1921-31	1931-41	1941-51	1951-61
Maritimes.....	-5.7	9.6	4.6	6.6
Quebec.....	18.9	2.4	7.3	19.2
Ontario.....	16.6	5.0	13.8	24.5
Prairies.....	17.3	-3.5	13.9	31.9
British Columbia.....	...	13.4	29.6	22.7
Canada.....	16.4	4.0	13.1	23.2

¹ Because Ottawa MA is partly in Ontario and partly in Quebec, Hull County in Quebec is allocated to the Ontario total.

10.—Rates of In-Migration and Out-Migration for the Census Metropolitan Areas, 1956-61 and Net Migration Ratios 1951-56 to 1961-66

Metropolitan Area	Population Aged 5 or Over ¹			Net Migration Ratios ²		
	In-migration Ratios ³	Out-migration Ratios ⁴	Net Migration Ratios ⁵	1951-56 ⁶	1956-61 ⁷	1961-66 ⁷
	Internal Migration Only			Includes External Migration		
Calgary.....	23.7	14.4	10.8	29.5	23.4	7.7
Edmonton.....	19.0	15.0	4.8	27.4	14.1	7.1
Halifax.....	14.1	15.8	-2.0	11.0	1.4	-2.7
Hamilton.....	8.6	7.6	1.0	11.3	6.4	5.9
Kitchener.....	14.8	7.8	7.6	..	..	14.9
London.....	16.0	13.2	3.2	11.8	8.0	6.8
Montreal.....	6.6	4.5	2.3	6.9	7.9	7.5
Ottawa.....	15.4	9.7	6.3	8.1	13.5	5.9
Quebec.....	7.3	5.3	2.1	3.3	5.0	7.4
Saint John.....	10.5	7.6	3.2	0.4	2.7	-2.1
St. John's.....	7.8	7.2	0.7	2.3	0.6	-0.3
Sudbury.....	12.1	13.4	-1.6	..	..	-5.4
Toronto.....	7.0	6.6	0.5	14.3	9.7	9.9
Vancouver.....	11.0	8.3	2.9	12.0	11.1	8.1
Victoria.....	14.4	11.9	2.9	11.4	7.3	9.3
Windsor.....	6.0	8.7	-3.0	4.0	-5.2	2.4
Winnipeg.....	12.0	10.3	2.0	7.9	6.8	-0.3
All MAs.....	9.9	7.8	2.2	10.5	8.6	6.9

¹ Based on sample data collected in the 1961 Census and refers to the population in private households as of 1961.

² Estimated from vital statistics; 100 (actual population increase—natural increase)/(population at beginning of period).

³ 100 (in-migration/reporting population).

⁴ 100 (out-migration/exposed population).

⁵ 100 (net migration/reporting population).

⁶ On 1961 areas.

⁷ On 1966 areas.

The demographic and socio-economic compositions of the migrants to and from MAs are highly significant for the growth potential of the Canadian population and for the functioning of the Canadian economy. The age profile of the migration, given in Table 11, shows the typical bulge in the ages which are marked by family formation, labour force entry and early working life—roughly ages 20 to 34. This bulge tends to reduce the median age of the MA population by its selective additions of young adults and by the indirect impact of these additions on the crude birth rate.

Generally, the migration streams flowing into and out of MAs show higher levels of education and occupational skills than any other major migration streams in Canada. Tables 12 and 13 show, for example, the highest concentrations of university-trained

persons among the migrants to and from MAs, and does so for age groups well above those that reflect recent moves to MAs for the purpose of obtaining university education. The high concentrations of university-trained persons shown for the streams flowing to and from MAs are only partly accounted for by the generally higher levels of educational attainment in MA populations.*

* Further discussion on this topic is presented in 1961 Census Monograph *Migration in Canada*, Vol. I, Chapter Four.

11.—Age Profile of Migration for the Census Metropolitan Areas,¹ 1956-61

Age Group	Males			Females		
	In-migration Ratios ²	Out-migration Ratios ²	Net Migration Ratios ²	In-migration Ratios ²	Out-migration Ratios ²	Net Migration Ratios ²
5-14 years.....	10.1	8.5	1.8	10.1	8.4	1.8
15-19 ".....	9.0	5.1	4.2	12.0	5.6	6.8
20-24 ".....	17.5	9.2	9.2	20.9	12.4	9.7
25-29 ".....	16.5	14.6	2.1	15.9	14.7	1.4
30-34 ".....	12.9	11.9	1.2	11.8	10.7	1.2
35-44 ".....	9.9	8.6	1.5	8.8	7.6	1.4
45-64 ".....	5.7	4.5	1.2	5.5	4.2	1.4
65 years or over.....	4.4	4.0	0.5	4.6	4.1	0.6
All MAs.....	9.9	7.9	2.0	9.9	7.7	2.3

¹ Includes persons moving from one MA to another.

² See footnotes ², ⁴, and ⁵, Table 10.

12.—Educational Status of Five-Year Internal Migrants to and from Census Metropolitan Areas, by Sex and Selected Age Group, 1956-61

Sex, Age and Schooling	All Persons Not Attending School ¹	Labour Force					
		In-migrants to MAs				Out-migrants from MAs to Non-MAs	Migrants between Non-MAs
		Total	From Different MAs	From Urban Non-MAs	From Rural Non-MAs		
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Males—							
25-34 years.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Elementary or less.....	32.3	23.2	14.0	25.8	36.5	24.6	34.5
Secondary.....	54.9	54.8	55.3	55.5	51.5	56.5	54.1
University.....	12.8	22.0	30.7	18.7	12.0	18.8	11.4
35 years or over.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Elementary or less.....	45.1	27.0	16.3	28.7	44.1	33.3	44.3
Secondary.....	43.8	51.9	56.1	52.1	43.2	50.2	44.6
University.....	11.1	21.1	27.6	19.3	12.7	16.6	11.1
Females—							
25-34 years.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Elementary or less.....	29.4	14.8	10.3	15.2	25.8	15.5	22.2
Secondary.....	63.3	70.7	72.7	71.1	63.5	70.8	67.8
University.....	7.3	14.5	17.0	13.7	10.7	13.7	10.0
35 years or over.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Elementary or less.....	43.9	28.2	20.3	25.4	37.6	23.2	35.8
Secondary.....	50.5	63.1	66.3	64.4	54.6	61.3	55.7
University.....	5.6	10.7	13.4	10.2	7.7	10.5	8.5

¹ Includes persons both within and outside of the labour force.

13.—Movement of Five-Year Internal Migrants with Some University Education¹ to and from Census Metropolitan Areas, classified by Broad Areas of Origin and Destination, by Sex and Selected Age Group, 1956-61.

Sex and Age Group	In-migrants to MAs from—				Out-migrants from MAs to—			
	Other Urban, Non-MAs			Other Rural, Non-MAs	Other Urban, Non-MAs			Other Rural, Non-MAs
	30,000 or Over	10,000-29,999	Under 10,000		30,000 or Over	10,000-29,999	Under 10,000	
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Males—								
25-34 years.....	27.1	17.7	14.3	12.0	28.3	22.2	19.8	12.4
35 years or over.....	23.8	21.3	15.7	12.7	25.4	19.6	18.3	11.4
Females—								
25-34 years.....	15.1	13.9	12.5	10.7	11.0	13.7	17.2	12.7
35 years or over.....	9.8	11.4	9.8	7.7	10.5	10.5	10.5	10.4

¹ Persons in the labour force and not attending school.

Subsection 2.—Populations of Incorporated Cities, Towns and Villages

The population of all incorporated cities, towns and villages is classified by size group in Table 14 for the census years 1951, 1956, 1961 and 1966. During the 1961-66 period, the number of such centres increased by 57 and the proportion of the total population living in them rose from 60.7 p.c. to 63.1 p.c.

The trend toward an increased concentration of the population in the larger urban centres continued in the 1961-66 period. In the five-year interval, the number of incorporated cities and towns of 50,000 or over rose from 29 to 40 and the proportion of the total population in these larger centres increased from 29.0 p.c. to 32.9 p.c. In contrast, although urban centres of 1,000 to 50,000 in size also increased in number from 893 to 921, the proportion of the population residing in these centres fell from 29.3 p.c. in 1961 to 27.9 p.c. in 1966. Similarly, the number of incorporated towns and villages under 1,000 rose from 1,039 to 1,057 in the 1961-66 period but their proportion of the population fell slightly from 2.4 p.c. to 2.2 p.c.

14.—Populations of Incorporated Cities, Towns and Villages classified by Size Group, Census Years 1951, 1956, 1961 and 1966

Size Group	1951			1956		
	Incorporated Centres	Population	P.C. of Total Population	Incorporated Centres	Population	P.C. of Total Population
	No.	No.		No.	No.	
Over 500,000.....	2	1,697,274	12.1	2	1,777,145	11.1
Between—						
400,000 and 500,000.....	—	—	—	—	—	—
300,000 and 400,000.....	1	344,833	2.5	1	365,844	2.3
200,000 and 300,000.....	3	646,076	4.6	4	942,849	5.9
100,000 and 200,000.....	4	572,756	4.1	4	576,156	3.6
50,000 and 100,000.....	9	588,436	4.2	12	769,323	4.8
25,000 and 50,000.....	24	802,380	5.7	27	929,624	5.8
15,000 and 25,000.....	34	636,713	4.5	43	853,341	5.3
10,000 and 15,000.....	29	347,410	2.5	44	527,802	3.3
5,000 and 10,000.....	100	720,077	5.1	117	830,289	5.2
3,000 and 5,000.....	119	457,492	3.3	130	497,818	3.1
1,000 and 3,000.....	409	698,062	5.0	450	772,013	4.8
Under 1,000.....	1,049	429,683	3.1	1,039	443,922	2.8
Totals.....	1,783	7,941,222	56.7	1,873	9,286,126	57.7

**14.—Populations of Incorporated Cities, Towns and Villages classified by Size Group,
Census Years 1951, 1956, 1961 and 1966—concluded**

Size Group	1961			1966		
	Incor- porated Centres	Popu- lation	P.C. of Total Popu- lation	Incor- porated Centres	Popu- lation	P.C. of Total Popu- lation
	No.	No.		No.	No.	
Over 500,000.....	2	1,863,469	10.2	2	1,886,839	9.4
Between—						
400,000 and 500,000.....	—	—	—	1	410,375	2.1
300,000 and 400,000.....	1	384,522	2.1	2	707,500	3.5
200,000 and 300,000.....	5	1,338,294	7.3	3	845,867	4.2
100,000 and 200,000.....	4	568,056	3.1	6	967,051	5.0
50,000 and 100,000.....	17	1,134,214	6.2	26	1,740,446	8.7
25,000 and 50,000.....	41	1,431,909	7.9	43	1,438,388	7.2
15,000 and 25,000.....	43	862,101	4.7	52	1,019,205	5.1
10,000 and 15,000.....	61	743,474	4.1	65	781,611	3.9
5,000 and 10,000.....	132	932,936	5.1	125	898,136	4.5
3,000 and 5,000.....	151	579,201	3.2	165	637,117	3.2
1,000 and 3,000.....	465	793,465	4.4	471	818,003	4.1
Under 1,000.....	1,039	437,207	2.4	1,057	445,246	2.2
Totals.....	1,961	11,068,848	60.7	2,015	12,625,784	63.1

The Canadian cities and towns having a population of over 50,000 in 1966 are listed in Table 15. Included also are the years of their incorporation as cities or towns and comparative population figures for 1951, 1956, 1961 and 1966 which are given according to the boundaries in those respective years.

**15.—Incorporated Cities and Towns with Populations of Over 50,000 at the 1966 Census,
with Comparable Population Figures for 1951, 1956 and 1961**

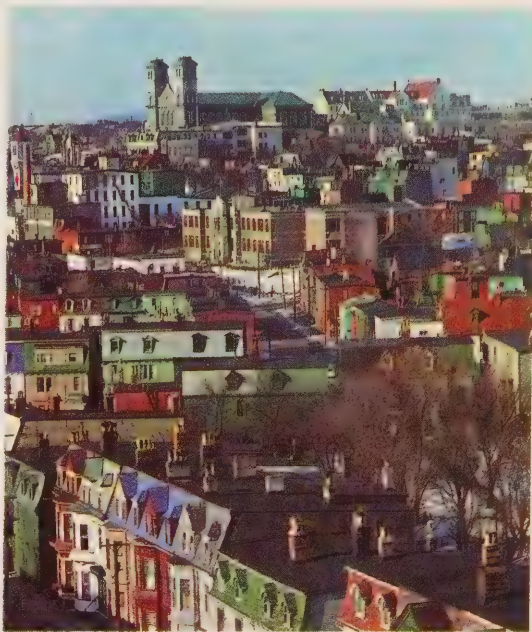
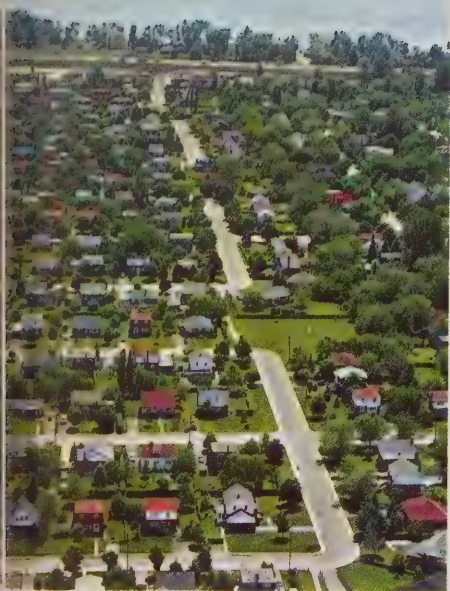
NOTE.—The asterisk (*) indicates a boundary change since the preceding census. Population totals are based on areas as incorporated at each of these dates.

City or Town and Province	Year of Incor- poration	1951	1956	1961	1966
		No.	No.	No.	No.
Brantford, Ont.....	1877	36,727	51,869*	55,201*	59,854*
Burlington, Ont.....	1915	6,017	9,127*	47,008*	65,941*
Calgary, Alta.....	1893	129,060	181,780*	249,641*	330,575*
Dartmouth, N.S.....	1961	15,037	21,093	46,966*	58,745
Edmonton, Alta.....	1904	159,631	226,002*	281,027*	376,925*
Guelph, Ont.....	1879	27,386	33,860*	39,838*	51,377*
Halifax, N.S.....	1841	85,589	93,301	92,511	86,792
Hamilton, Ont.....	1846	208,321	239,625*	273,991*	298,121*
Hull, Que.....	1875	43,483	49,243*	56,929*	60,176*
Jacques-Cartier, Que.....	1951	22,450	33,132	40,807*	52,527
Kingston, Ont.....	1846	33,459	48,618*	53,526	59,004
Kitchener, Ont.....	1912	44,867	59,562*	74,485*	93,255*
Laval (Ville de), Que. ¹	1965	37,843	69,410	124,741	196,088
London, Ont.....	1855	95,343	101,693*	169,569*	194,416
Montreal, Que.....	1832	1,021,520	1,109,439*	1,191,062*	1,222,255*
Montreal N., Que.....	1959	14,081	25,407	48,433	67,806
Niagara Falls, Ont.....	1903	22,874	23,563	22,351	56,891*
Oakville, Ont.....	1857	6,010	9,983	10,366	52,793*
Oshawa, Ont.....	1924	41,545	50,412	62,415	78,082
Ottawa, Ont.....	1855	202,045	222,129	268,206	290,741
Peterborough, Ont.....	1905	38,272	42,698*	47,185*	56,177*
Quebec, Que.....	1832	164,016	170,703	171,979	166,984
Regina, Sask.....	1903	71,319	89,755*	112,141*	131,127*
Saint John, N.B.....	1785	50,779	52,491	55,153	51,567
St. Catharines, Ont.....	1876	37,984	39,708*	84,472*	97,101
St. John's, Nfld.....	1888	52,873	57,078	63,633	79,884*
St. Laurent, Que.....	1955	20,426	38,291*	49,805*	59,479*

¹ All the municipalities on Île-Jésus were amalgamated to form the city of Ville de Laval in 1965.

Canada's more than five million dwellings range from small single-family houses to suites in huge apartment buildings and are a mixture of the old and the new.

City boundaries have moved outward to accommodate large new residential areas such as the Lakeshore area west of Montreal.



Old homes are part of the charm of New Brunswick's Saint John, the only Canadian city incorporated before 1800.

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g skyward attest to
recent tremendous
vith in Vancouver's
population.



15.—Incorporated Cities and Towns with Populations of Over 50,000 at the 1966 Census, with Comparable Population Figures for 1951, 1956 and 1961—concluded

City or Town and Province	Year of Incorporation	1951	1956	1961	1966
		No.	No.	No.	No.
St. Michel, Que.....	1952	10,539	24,706	55,978	71,446*
Sarnia, Ont.....	1914	34,697	43,447	50,976	54,552
Saskatoon, Sask.....	1906	53,268	72,858*	95,526*	115,892*
Sault Ste. Marie, Ont.....	1912	32,452	37,329	43,088*	74,594*
Sherbrooke, Que.....	1875	50,543	58,668*	66,554	75,690
Sudbury, Ont.....	1930	42,410	46,482	80,120*	84,888*
Toronto, Ont.....	1834	675,754	667,706*	672,407	664,584
Trois-Rivières, Que.....	1857	46,074	50,483*	53,477*	57,540*
Vancouver, B.C.....	1886	344,833	365,844*	384,522	410,375
Verdun, Que.....	1912	77,891	78,262*	78,317	76,832
Victoria, B.C.....	1862	51,331	54,584	54,941	57,453
Windsor, Ont.....	1892	120,049	121,980	114,367*	192,544*
Winnipeg, Man.....	1873	235,710	255,093*	265,429*	257,005*

The 961 incorporated urban centres in Canada having a population of 1,000 or more at the time of the 1966 Census are listed alphabetically by province in Table 16 and their populations given for the two census years 1961 and 1966. Each population figure is for the boundary in effect at the time of the respective census.

16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966

NOTE.—Population tables are based on areas as incorporated at each of these dates; a change in municipal boundary since the preceding census is indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: c.=city, t.=town and v.=village.

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Newfoundland—			Newfoundland—concluded		
Badger, t.....	1	1,192	Mount Pearl, t.....	2,785	4,428
Baie Verte, t.....	958	2,144*	Placentia, t.....	1,610	1,847
Bay Roberts, t.....	1,328	3,455*	Ramea, t.....	970	1,160
Bishop's Falls, t.....	1	4,127	Roddickton, t.....	1	1,227
Bonavista, t.....	1	4,192	St. Alban's, t.....	1	1,715
Botwood, t.....	3,680	4,277*	St. Anthony, t.....	1,820	2,269
Burgeo, t.....	1,454	1,682	St. George's, t.....	1	2,046
Burin, t.....	1,144	1,167	St. John's, c.....	63,633	79,884*
Carbonear, t.....	4,234	4,584	St. Lawrence, t.....	2,095	2,130
Catalina, t.....	4,110	1,089	Springdale, t.....	1	2,773
Channel-Port aux Basques, t.....	4,141	5,692*	Stephenville, t.....	6,043	5,910
Clarenville, t.....	1,541	1,813*	Stephenville Crossing, t.....	2,209	2,433*
Corner Brook, c.....	25,185	27,116	Twillingate, t.....	1	1,374
Deer Lake, t.....	3,998	4,289	Upper Island Cove, t.....	1	1,790
Dunville, t.....	1	1,622	Wabana, t.....	8,026	7,884*
Fogo, t.....	1,152	1,150	Wesleyville, t.....	1,285	1,238*
Fortune, t.....	1,360	1,703	Windsor, t.....	5,505	6,692
Freshwater, t.....	1,396	1,310			
Gander, t.....	5,725	7,183	Prince Edward Island—		
Glenwood, t.....	1	1,000	Charlottetown, c.....	18,318	18,427*
Glovertown, t.....	1,197	1,246	Kensington, t.....	884	1,022
Grand Bank, t.....	2,703	3,143	Montague, t.....	1,126	1,289
Grand Falls, t.....	1	7,451	Parkdale, v.....	1,735	2,071
Happy Valley, t.....	1	4,215	St. Eleanors, v.....	1,002	1,419
Harbour Breton, t.....	1,076	1,442	Sherwood, v.....	1,680	2,407
Harbour Grace, t.....	2,650	2,811	Souris, t.....	1,537	1,443
Hare Bay, t.....	1	1,410	Summerside, t.....	8,611	10,042*
Lewisport, t.....	2,702	2,892			
Marystown, t.....	1,691	1,894			

¹ Incorporated after June 1, 1961.

**16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,
by Province, Census Years 1961 and 1966—continued**

16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,
by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Quebec—continued			Quebec—continued		
Courville, t.	4,670	5,724	La Providence, v.	4,251	4,712
Cowansville, t.	7,050	10,692*	LaSalle, c.	30,904	48,322
Crabtree, v.	1,313	1,509	La Sarre, t.	3,944	4,798
Danville, t.	2,562	2,578	L'Assomption, t.	4,448	4,662
Delson, t.	2,075	2,601	La Tuque, t.	13,023	13,554
Desbiens, t.	1,970	1,979	Laurentides, t.	1,098	1,653
Deschailhons sur St.			Laizon, c.	11,533	12,877
Laurent, v.	1,283	1,265	Laval (Ville de), c. ²	124,741	196,088
Deschambault, v.	1,056	1,040	Lavaltrie, v.	1,034	1,189
Deschênes, v.	2,090	1,791	LeMoyné, t.	8,057	8,888
Deux Montagnes, c.	7,274	8,069*	Lennoxville, t.	3,699	3,977
Disraeli, v.	3,079	3,111	L'Epiphanie, v.	2,663	2,664
Dolbeau, t.	6,052	6,630	Léry, t.	1,957	2,130
Dollard des Ormeaux, t.	1,248	12,297	Les Saules, t.	4,098	6,242*
Donnacoona, t.	4,812	4,815	Lévis, c.	15,112	15,627*
Dorion, t.	4,996	6,083*	L'Isletville, v.	1,184	1,234
Dorval, c.	18,592	20,905	L'Isle Verte, v.	1,517	1,484
Drummondville, c.	27,909	29,216	Longueuil, c.	24,131	25,593
Drummondville S., t.	1	8,725	Loretteville, c.	6,522	9,465*
Drummondville W., v.	2,057	2,682	Lorraine, t.	197	1,627*
Dubergier, t.	4,707	8,489*	Louiseville, t.	4,138	4,236*
East Angus, t.	4,756	4,909	Luceville, t.	1,419	1,564*
East Broughton			Macamic, t.	1,614	1,770
Station, v.	1,136	1,093	Magog, c.	13,139	13,797
Farnham, c.	6,354	6,752	Malartic, t.	6,998	6,606
Ferme Neuve, v.	1,971	1,944	Maniwaki, t.	6,349	6,404
Forestville, t.	1,529	1,572	Maple Grove, t.	1,412	1,600
Fort Coulonge, v.	1,823	1,846	Marieville, t.	3,809	4,365*
Francoeur, v.	968	1,060*	Masson, v.	1,933	2,249
Gagnon, t.	1,900	3,999	Matagami, t.	1	2,244
Gaspé, t.	2,603	2,938	Matane, t.	9,190	11,109*
Gatineau, t.	13,022	17,727*	McMasterville, v.	2,075	2,456
Giffard, c.	10,129	12,585	Melocheville, v.	1,666	1,687
Gracefield, v.	670	1,054*	Mistassini, t.	3,461	3,884*
Granby, c.	31,463	34,349*	Montebello, v.	1,486	1,350
Grande Rivière, v.	1,176	1,216	Mont Joli, t.	6,178	6,366
Grand Mère, c.	15,806	16,407	Mont Laurier, t.	5,859	6,140
Greenfield Park, t.	7,807	12,288*	Mont St. Hilaire, t.	2,911	4,807*
Grenville, v.	1,330	1,501	Montmagny, c.	6,850	12,241*
Hampstead, t.	4,557	6,158	Montmorency, t.	5,985	5,541
Hauterive, v.	5,980	11,366	Montreal (Ville de), c.	1,191,062	1,222,255*
Hébertville Station, v.	1,257	1,179	Montreal E., t.	5,884	5,779
Hudson, v.	1,671	1,642	Montreal N., c.	48,433	67,806
Hudson Heights, v.	1,540	1,543	Montreal W., t.	6,446	6,612
Hull, c.	56,929	60,176*	Mount Royal, t.	21,182	21,845
Huntingdon, t.	3,134	3,167	Murdochville, t.	2,951	3,028
Iberville, t.	7,588	8,400	Napierville, v.	1,812	2,010*
Ile Perrot, t.	3,106	3,578	Nazareth, v.	1	1,965
Jacques-Cartier, c.	40,807	52,527	Neufchâtel, t.	1	6,618
Joliette, c.	18,088	19,188*	Nicolet, t.	4,441	4,707
Jonquière, c.	28,588	29,663	Noranda, c.	11,477	11,521
Kénogami, c.	11,816	11,534*	Normandin, v.	1,838	2,174
Knowlton, v.	1,396	1,486	Notre Dame de Lorette, v.	3,961	5,691
Labelle, v.	1,224	1,307	Notre Dame d'Hébertville, v.	1,604	1,493
Lac au Saumon, v.	1,548	1,393	Notre Dame des Laurentides, t.	1	4,446
Lac Etchemin, v.	2,297	2,492*	Notre Dame du Lac, v.	1,695	1,545
Lachine, c.	38,630	43,155	Omerville, v.	1,094	1,131
Lachute, c.	7,560	10,215*	Ornstown, v.	1,527	1,479
Lac Mégantic, t.	7,015	6,958	Orsainville, c.	4,236	7,068
Lacolle, v.	1,187	1,177	Outremont, c.	30,753	30,881*
Lafèche, c.	10,984	13,433	Papineauville, v.	1,300	1,410
Lafontaine, v.	1,556	2,346*	Pierrefonds, v.	12,171	27,924*
La Guadeloupe, v.	1,728	1,877	Pierreville, v.	1,559	1,529
La Malbaie, t.	2,580	4,307*	Pincoirt, t.	2,685	5,656
L'Annonciation, v.	1,042	2,040*	Plessisville, t.	6,570	7,238
La Pérade, v.	1,184	1,117	Pointe au Pic, v.	1,333	1,246
La Pocatière, t.	3,086	3,470	Pointe aux Trembles, c.	21,926	29,888
La Prairie, t.	7,328	8,122	Pointe Calumet, v.	514	1,157

* Incorporated after June 1, 1961.
city of Ville de Laval in 1965.

* All the cities and towns on Île-Jésus were amalgamated to form the

**16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,
by Province, Census Years 1961 and 1966—continued**

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Quebec—continued			Quebec—continued		
Pointe Claire, c.....	22,709	26,784	St. Joseph (St. Hyacinthe Co.), v.	3,799	4,870*
Pointe Gatineau, t.....	8,854	11,053	St. Joseph de Beauce, t.....	2,484	2,805*
Pont Rouge, v.....	2,988	3,229	St. Joseph de la Rivière Bleue, v.	1,540	1,406
Port Alfred, t.....	9,066	9,551*	St. Joseph de Sorel, t.....	3,588	3,725
Port Cartier, t.....	3,458	3,537	St. Jovite, v.....	2,692	3,083
Portneuf, t.....	1,380	1,388	St. Lambert, c.....	14,531	16,003
Préville, t.....	1,001	1,299	St. Laurent, c.....	49,805	59,479*
Price, v.....	3,094	2,939	St. Léonard, c.....	4,893	25,328*
Princeville, t.....	3,174	3,589*	St. Luc, t.....	1	3,581
Quebec, c.....	171,979	166,984	Ste. Madeleine, v.....	964	1,097
Rawdon, v.....	2,388	2,539	St. Marc des Carrières, v.....	2,622	2,681
Repentigny, t.....	9,139	14,976	Ste. Marie, t.....	3,662	4,192
Richelieu, v.....	1,612	1,663	St. Michel, c.....	55,978	71,446*
Richmond, t.....	4,072	4,014	St. Nicolas, t.....	1	1,635
Rigaud, t.....	1,990	1,959	St. Pacôme, v.....	1,242	1,198
Rimouski, c.....	17,739	20,330*	St. Pamphile, t.....	1	3,516
Rimouski E., v.....	1,581	2,043	St. Pascal, v.....	2,144	2,216
Rivière du Loup, c.....	10,835	11,637	Ste. Philomène, t.....	1	3,234
Rivière du Moulin, t.....	4,386	4,542*	St. Pie, v.....	1,434	1,652
Robertsonville, v.....	1,156	1,226	St. Pierre, t.....	6,795	7,066
Roberval, c.....	7,739	8,552*	St. Raphael, v.....	1,134	1,116
Rock Island, t.....	1,608	1,596	St. Raymond, t.....	3,931	4,318
Rosemère, t.....	6,158	6,429*	St. Rédempteur, v.....	1,035	1,287
Rouyn, c.....	18,716	18,581	St. Rémi, t.....	2,276	2,221
Roxboro, v.....	6,298	7,930*	St. Romuald d'Etchemin, c.....	1	7,375
St. Agapitville, v.....	1,117	1,347*	Ste. Rosalie, v.....	1,255	1,618*
Ste. Agathe des Monts, t.....	5,725	6,010	St. Sauveur des Monts, v.....	1,702	1,908
St. Ambroise, v.....	1,576	1,559	St. Siméon, v.....	1,197	1,145
St. André Avellan, v.....	1,066	1,002	Ste. Thècle, v.....	2,009	1,881
St. André E., v.....	1,183	1,201	Ste. Thérèse, c.....	11,771	15,628*
Ste. Anne de Beupré, v.....	1,878	1,523	St. Timothée, v.....	1,003	1,252
Ste. Anne de Bellevue, t.....	4,044	5,334*	St. Tite, t.....	3,250	3,113
St. Anselme, v.....	1,131	1,237	St. Zacharie, v.....	1,361	1,349
St. Antoine des Laurentides, v.....	3,005	4,401*	Sacré Cœur de Jésus, v.....	1,108	1,305
St. Basile S., v.....	1,709	1,843	Sayabec, v.....	2,314	2,228
St. Boniface de Shawinigan, v.....	917	2,670*	Schefferville, t.....	3,178	3,086
St. Bruno, v.....	1,158	1,216	Scotstown, t.....	1,038	1,010
St. Bruno de Montarville, t.....	6,760	10,712	Senneterre, t.....	3,246	3,567*
St. Casimir, v.....	1,386	1,378	Senneville, v.....	1,262	1,413
St. Césaire, t.....	2,097	2,240*	Sept Îles, c.....	14,196	18,950
St. Chrysostome, v.....	972	1,048	Shawbridge, v.....	1,034	1,038
St. Cœur de Marie, v.....	1,302	1,312	Shawinigan, c.....	32,169	30,777
Ste. Croix, v.....	1,363	1,347	Shawinigan S. t.....	12,683	12,250
St. Cyrille, v.....	1,138	1,177	Shawville, v.....	1,534	1,652
St. Damase, v.....	879	1,072	Sherbrooke, c.....	66,554	75,690
St. David de l'Auberivière, t.....	1	2,962	Sillery, c.....	14,109	14,737
St. Émile, v.....	1,806	2,104	Sorel, c.....	17,147	19,021*
St. Eustache, t.....	5,463	7,319*	Stanstead Plain, v.....	1,116	1,183
St. Félixien, t.....	5,133	5,104*	Sutton, t.....	1,755	1,877
St. Félix de Valois, v.....	1,399	1,428	Tadoussac, v.....	1,083	1,059
Ste. Foy, c.....	29,716	48,208*	Temiscaming, t.....	2,517	2,799
St. Fulgence, v.....	1,094	1,053	Templeton, v.....	2,965	3,267
St. Gabriel de Brandon, v.....	3,425	3,464*	Terrebonne, t.....	6,207	7,480
St. Gédéon, v.....	930	1,030	Thetford Mines, c.....	21,618	21,614
Ste. Geneviève, t.....	2,397	2,596	Thurso, t.....	3,310	3,332
St. Georges (Beauce Co.), t.....	4,082	6,680*	Tracy, t.....	8,171	10,918
St. Georges (Champlain Co.), v.	1,775	1,992	Tring Junction, v.....	1,214	1,297
St. Georges W., t.....	4,755	5,588	Trois Pistoles, t.....	4,349	4,710*
St. Germain de Grantham, v.....	1,015	1,138	Trois-Rivières, c.....	53,477	57,540*
St. Henri, v.....	782	1,106*	Trois-Rivières W., t.....	1	6,345
St. Hubert, t.....	14,380	17,215*	Valcourt, v.....	843	1,114
St. Hyacinthe, c.....	22,534	23,781*	Val David, v.....	1,118	1,281
St. Jacques, v.....	2,038	2,000	Val d'Or, t.....	10,983	12,147
St. Jean, c.....	26,988	27,784*	Vallée Junction, v.....	1,405	1,388
St. Jean Chrysostome, t.....	1	1,633	Valleyfield (Salaberry de), c.....	27,297	29,111*
St. Jean de Boischatel, v.....	1,576	1,648	Val St. Michel, t.....	1,290	1,204
St. Jean Eudes, v.....	2,873	2,721	Vanier, t.....	8,783	9,362
St. Jérôme (Lac St. Jean Co.), v.	1,962	2,089*	Varennes, v.....	2,240	2,382
St. Jérôme (Terrebonne Co.), c.....	24,546	26,511*	Vaudreuil, t.....	897	3,105*

* Incorporated after June 1, 1961.

16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over, by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
Quebec—concluded	No.	No.	Ontario—continued	No.	No.
Verchères, v.....	1,768	1,918	Crystal Beach, v.....	1,886	1,857
Verdun, c.....	78,317	76,832	Deep River, t.....	5,377	5,573
Victoriaville, t.....	18,720	21,320*	Delhi, t.....	3,427	3,503*
Ville Marie, t.....	1,710	1,962	Deseronto, t.....	1,797	1,836
Villeneuve, t.....	1,934	2,829*	Dresden, t.....	2,346	2,372*
Warwick, t.....	2,487	2,577	Dryden, t.....	5,723	6,732
Waterloo, t.....	4,543	4,765	Dundas, t.....	12,912	15,501
Waterville, t.....	1,330	1,422	Dunnville, t.....	5,181	5,402
Weedon Centre, v.....	1,426	1,385	Durham, t.....	2,180	2,410
Westmount, c.....	25,012	24,107	Eastview, c. l.....	24,555	24,269
Windsor, t.....	6,589	6,496	Eganville, v.....	1,549	1,478
Yamachiche, v.....	1,186	1,179	Elmira, t.....	3,337	4,047*
Ontario—			Elmvale, v.....	957	1,031
Acton, t.....	4,144	4,416	Elora, v.....	1,486	1,644
Ajax, t.....	7,755	9,412	Englehart, t.....	1,786	1,790
Alexandria, t.....	2,597	2,864	Erin, v.....	1,005	1,195
Alfred, v.....	1,195	1,225	Espanola, t.....	5,353	5,567
Alliston, t.....	2,884	3,149	Essex, t.....	3,428	3,742
Almonte, t.....	3,267	3,556	Exeter, t.....	3,047	3,226
Amherstburg, t.....	4,452	4,641	Fenelon Falls, v.....	1,359	1,404
Arnprior, t.....	5,474	5,693	Fergus, t.....	3,831	4,376*
Arthur, v.....	1,200	1,242	Fontenille, v.....	2,324	2,790
Athens, v.....	1,015	1,002	Forest, t.....	2,188	2,151
Aurora, t.....	8,791	10,425	Forest Hill, v.....	20,489	23,135
Aylmer, t.....	4,705	4,501	Fort Erie, t.....	9,027	9,793
Ayr, v.....	1,016	1,134	Fort Frances, t.....	9,481	9,524
Bancroft, v.....	2,615	2,152	Fort William, c.....	45,214	48,208
Barrie, c.....	21,169	24,016*	Frankford, v.....	1,642	1,823
Barry's Bay, v.....	1,439	1,388	Galt, c.....	27,830	33,491*
Beamsville, t.....	2,537	3,886*	Gananoque, t.....	5,096	5,237*
Beaverton, v.....	1,217	1,242*	Georgetown, t.....	10,298	11,832
Belle River, v.....	1,854	2,280*	Geraldton, t.....	3,375	3,658
Belleville, c.....	30,655	32,785	Glencoe, v.....	1,156	1,185
Blenheim, t.....	3,151	3,356*	Goderich, t.....	6,411	6,710*
Blind River, t.....	4,093	3,317	Gravenhurst, t.....	3,077	3,257
Bobcaygeon, v.....	1,210	1,251	Grimsby, t.....	5,148	6,634
Bolton, v.....	2,104	2,344	Guelph, c.....	39,838	51,377*
Bowmanville, t.....	7,397	8,513	Hagersville, v.....	2,075	2,169
Bracebridge, t.....	2,927	3,045	Haileybury, t.....	2,638	3,117
Bradford, t.....	2,342	2,529	Hamilton, c.....	273,991	298,121*
Brampton, t.....	18,467	36,264	Hanover, t.....	4,401	4,665*
Brantford, c.....	55,201	59,854*	Harriston, t.....	1,631	1,748
Bridgeport, v.....	1,672	2,111	Harrow, t.....	1,787	1,941
Brighton, v.....	2,403	2,766	Havelock, v.....	1,260	1,224
Brockville, c.....	17,744	19,266	Hawkesbury, t.....	8,661	9,188*
Burlington, t.....	47,008	65,941*	Hearst, t.....	2,373	2,882
Caledonia, t.....	2,198	2,725	Hespeler, t.....	4,519	5,381
Campbellford, t.....	3,478	3,445	Huntsville, t.....	3,189	3,342*
Cannington, v.....	1,024	1,049*	Ingersoll, t.....	6,674	7,249
Capreol, t.....	3,003	3,092	Iroquois, v.....	1,136	1,141
Cardinal, v.....	1,944	1,947	Iroquois Falls, t.....	1,681	1,834
Carleton Place, t.....	4,796	4,819	Kapuskasing, t.....	6,870	12,617*
Casselman, v.....	1,277	1,227	Keewatin, t.....	2,197	2,089
Cayuga, v.....	897	1,031	Kemptville, t.....	1,959	2,182
Chalk River, v.....	1,135	1,086	Kenora, t.....	10,904	11,295
Chatham, c.....	29,826	32,424*	Kincardine, t.....	2,841	2,823
Chelmsford, t.....	2,559	2,752	Kingston, c.....	53,526	59,004
Chesley, t.....	1,697	1,686	Kingsville, t.....	3,041	3,545*
Chesterville, v.....	1,248	1,258*	Kitchener, c.....	74,485	93,255*
Chippawa, v.....	3,256	3,877	Lakefield, v.....	2,167	2,242
Clinton, t.....	3,491	3,280	Leamington, t.....	9,030	9,554*
Cobalt, t.....	2,209	2,211	Leaside, t.....	18,579	21,250
Cobourg, t.....	10,646	11,524*	Levack, t.....	3,178	3,025
Coenraane, v.....	4,521	4,775	Lindsay, v.....	11,399	12,090
Colborne, v.....	1,836	1,450	Listowel, t.....	4,002	4,526
Collingwood, t.....	8,385	8,471	Little Current, t.....	1,527	1,441
Coniston, t.....	2,692	2,692	Lively, t.....	3,211	3,169
Copper Cliff, t.....	3,600	3,505	London, c.....	169,569	194,416
Cornwall, c.....	43,639	45,766	Long Branch, v.....	11,039	12,980
			L'Orignal, v.....	1,189	1,238
			Lucan, v.....	986	1,011

* Vanier City as of Jan. 1, 1969.

¹ Orillia became a city on Jan. 1, 1969.

16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,
by Province, Census Years 1961 and 1966—continued

Province and Incorporated Centre	Population		Province and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Manitoba—concluded			Saskatchewan—concluded		
Neepawa, t.	3,197	3,229	Saskatoon, c.	95,526	115,892*
Portage la Prairie, c.	12,388	13,012	Shaunavon, t.	2,154	2,318
Rivers, t.	1,574	1,685	Shellbrook, t.	1,042	1,088
Roblin, t.	1,368	1,617*	Swift Current, c.	12,186	14,485*
Russell, t.	1,263	1,511	Tisdale, t.	2,402	2,914*
St. Boniface, c.	37,600	43,214	Unity, t.	1,902	2,154
St. James, c.	33,977	35,685	Wadena, t.	1,311	1,404
St. Vital, c.	1	29,528	Wakaw, t.	974	1,032*
Selkirk, t.	8,576	9,157	Watrous, t.	1,461	1,459
Souris, t.	1,841	1,829*	Weyburn, c.	9,101	9,000
Steinbach, t.	3,739	4,648*	Whitewood, t.	900	1,069
Stonewall, t.	1,420	1,577	Wilkie, t.	1,612	1,603
Swan River, t.	3,163	3,470	Wolseley, t.	1,031	1,048
The Pas, t.	4,671	5,031*	Wynyard, t.	1,686	1,956*
Transcona, c.	14,248	19,761	Yorkton, c.	9,995	12,645*
Tuxedo, t.	1,627	2,480			
Virden, t.	2,708	2,933			
West Kildonan, c.	20,077	22,240			
Winkler, t.	2,529	2,570*			
Winnipeg, c.	265,429	267,005*			
Saskatchewan—			Alberta—		
Assiniboia, t.	2,491	2,872*	Athabasca, t.	1,487	1,551
Battleford, t.	1,627	1,766	Barrhead, t.	2,286	2,592
Biggar, t.	2,702	2,755	Beaverlodge, t.	897	1,083*
Broadview, t.	1,008	1,051*	Bellevue, v.	1,323	1,174
Canora, t.	2,117	2,734	Blairmore, t.	1,980	1,779
Carlyle, t.	982	1,064	Bonnyville, t.	1,736	2,237*
Carmuff, t.	957	1,194	Bow Island, t.	1,122	1,160
Carrot River, t.	930	1,092*	Brooks, t.	2,827	3,354
Creighton, t.	1,729	1,710	Calgary, c.	249,641	330,575*
Davidson, t.	928	1,066	Camrose, c.	6,939	8,362*
Esterhazy, t.	1,114	3,190*	Canmore, v.	1	1,445
Estevan, c.	7,728	9,062*	Cardston, t.	2,801	2,721
Eston, t.	1,695	1,548	Castor, t.	1,025	1,090
Flin Flon, t.	1	1	Clareholm, t.	2,143	2,569*
Foam Lake, t.	933	1,165*	Coaldale, t.	2,592	2,541*
Fort Qu'Appelle, t.	1,521	1,600	Cold Lake, t.	1,307	1,289*
Gravelbourg, t.	1,499	1,626*	Coleman, t.	1,713	1,507*
Grenfell, t.	1,256	1,369	Devon, t.	1,418	1,283
Gull Lake, t.	1,038	1,235*	Didsbury, t.	1,254	1,588
Herbert, t.	1,008	1,040	Drayton Valley, t.	3,854	3,352*
Hudson Bay, t.	1,601	1,957*	Drumheller, c.	2,931	3,574*
Humboldt, t.	3,245	3,979	Edmonton, c.	281,027	376,925*
Indian Head, t.	1,802	1,891*	Edson, t.	3,198	3,788*
Kamsack, t.	2,968	2,982*	Fairview, t.	1,506	1,884*
Kerrobert, t.	1,220	1,237	Fort Macleod, t.	2,490	2,709
Kindersley, t.	2,990	3,534*	Fort McMurray, t.	1,186	2,614*
Langenburg, t.	757	1,269	Fort Saskatchewan, t.	2,972	4,152*
Leader, t.	1,211	1,236	Grand Centre, t.	1,493	1,731*
Lloydminster, c.			Grande Prairie, c.	8,352	11,417*
(Sask. and Alta.)	5,667	7,071*	Grimshaw, t.	1,095	1,376*
Maple Creek, t.	2,291	2,359	Hanna, t.	2,645	2,633
Meadow Lake, t.	2,803	3,375*	High Prairie, t.	1,756	2,241
Melfort, t.	4,039	4,386	High River, t.	2,276	2,239
Melville, c.	5,191	5,690*	Hinton, t.	3,529	4,307
Moose Jaw, c.	33,206	33,417*	Innisfail, t.	2,270	2,531*
Mosomin, t.	1,781	2,141	Lac La Biche, t.	1,314	1,490
Nipawin, t.	3,836	3,963	Lacombe, t.	3,029	3,035
North Battleford, c.	11,230	12,262	Leduc, t.	2,356	2,856*
Outlook, t.	1,340	1,499	Lethbridge, c.	35,454	37,186*
Oxbow, t.	1,359	1,569*	Lloydminster, c.	1	1
Preeceville, t.	924	1,202	Magrath, t.	1,338	1,220*
Prince Albert, c.	24,168	26,269*	Manning, t.	896	1,179
Radville, t.	1,067	1,053	McLennan, t.	1,078	1,104*
Regina, c.	112,141	131,127*	Medicine Hat, c.	24,484	25,574
Rosetown, t.	2,450	2,658	Olds, t.	2,433	2,990*
Rosthern, t.	1,264	1,414*	Peace River, t.	2,643	4,087*
			Picture Butte, t.	978	1,013*
			Pincher Creek, t.	2,961	2,852*
			Ponoka, t.	3,938	4,421*
			Provost, t.	1,022	1,328
			Raymond, t.	2,362	1,950

* Incorporated after June 1, 1961.

* See Manitoba.

* See Saskatchewan.

**16.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over,
by Province, Census Years 1961 and 1966—concluded**

Province and Incorporated Centre	Population		Province or Territory and Incorporated Centre	Population	
	1961 Census	1966 Census		1961 Census	1966 Census
	No.	No.		No.	No.
Alberta—concluded			British Columbia—concluded		
Redcliff, t.....	2,221	2,141	Kamloops, c.....	10,076	10,759
Red Deer, c.....	19,612	26,171*	Kelowna, c.....	13,188	17,006*
Redwater, t.....	1,135	1,041	Kimberley, c.....	6,013	5,901
Rimbey, t.....	1,266	1,502*	Kinnaird, v.....	2,123	2,869*
Rocky Mountain House, t.....	2,360	2,448	Ladysmith, t.....	2,173	3,410*
St. Albert, t.....	4,059	9,736*	Lake Cowichan, v.....	2,149	2,353
St. Paul, t.....	2,823	3,543*	Langley, c.....	2,365	2,800
Slave Lake, t.....	468	1,716*	Lillooet, v.....	1,304	1,379*
Spirit River, t.....	890	1,034*	Marysville, v.....	1,057	1,126
Stettler, t.....	3,638	3,988*	Merritt, t.....	3,039	4,500
Stony Plain, t.....	1,811	1,397	Mission City, t.....	3,251	3,412
Swan Hills, t.....	643	1,414	Montrose, v.....	862	1,079
Sylvan Lake, t.....	1,381	1,332	Nakusp, v.....	1	1,282
Taber, t.....	3,951	4,584	Nanaimo, c.....	14,135	15,188
Three Hills, t.....	1,491	1,452*	Nelson, c.....	7,074	9,504*
Two Hills, t.....	826	1,056*	New Westminster, c.....	33,654	38,013*
Valleyview, t.....	1,077	1,827*	North Kamloops, t.....	6,456	11,319*
Vegreville, t.....	2,908	3,598*	North Vancouver, c.....	23,656	26,851
Vermilion, t.....	2,449	2,685	Oliver, v.....	1,774	1,663
Viking, t.....	1,043	1,146*	Osoyoos, v.....	1,022	1,166*
Vulcan, t.....	1,310	1,505	Parksville, v.....	1,183	1,426
Wainwright, t.....	3,351	3,867*	Penticton, c.....	13,859	15,330*
Westlock, t.....	1,838	2,685*	Port Alberni, c.....	11,560	13,755*
Wetaskiwin, c.....	5,300	6,008*	Port Coquitlam, c.....	8,111	11,121
Whitecourt, t.....	1,054	2,279*	Port Moody, c.....	4,789	7,021
			Prince George, c.....	13,877	24,471*
British Columbia—			Prince Rupert, c.....	11,987	14,677*
Alberni, c.....	4,616	4,783	Princeston, v.....	2,163	2,151*
Armstrong, c.....	1,288	1,426	Quesnel, t.....	4,673	5,725*
Ashcroft, v.....	868	1,154*	Revelstoke, c.....	3,624	4,791*
Burns Lake, v.....	1,041	1,290	Rossland, c.....	4,354	4,264
Castlegar, t.....	2,253	3,440*	Salmon Arm, v.....	1,506	1,854
Chetwynd, v.....	1	1,368	Sidney, v.....	1,558	3,165*
Chilliwack, c.....	8,259	8,681	Smithers, v.....	2,487	3,135*
Comox, v.....	1,756	2,671	Trail, c.....	11,580	11,600
Courtenay, c.....	3,485	4,913	Uclulet, v.....	782	1,054*
Cranbrook, c.....	5,549	7,849*	Vancouver, c.....	384,522	410,375
Creston, t.....	2,460	2,920*	Vanderhoof, v.....	1,460	1,607
Cumberland, v.....	1,303	1,277	Vernon, c.....	10,250	11,423*
Dawson Creek, c.....	10,946	12,392*	Victoria, c.....	54,941	57,453
Duncan, c.....	3,726	4,299	Warfield, v.....	2,212	2,255
Enderby, c.....	1,075	1,114	White Rock, c.....	6,453	7,787
Fernie, c.....	2,661	2,715*	Williams Lake, t.....	2,120	3,167
Fort St. James, v.....	1,081	1,213			
Fort St. John, t.....	3,619	6,749*	Yukon Territory—		
Fruitvale, v.....	1,032	1,203	Whitehorse, c.....	5,031	4,771
Gibson's Landing, v.....	1,091	1,450			
Golden, v.....	1,776	2,590	Northwest Territories—		
Grand Forks, c.....	2,347	2,556*	Fort Smith, v.....	1	2,120
Hope, t.....	2,751	2,948	Hay River, t.....	1	2,002
Invermere, v.....	744	1,022*	Yellowknife, t.....	1	3,741

* Incorporated after June 1, 1961.

Subsection 3.—Density of Population

Table 17 shows the density of population in the different provinces and territories of Canada in the census years 1951, 1956, 1961 and 1966. Omitting the Yukon and Northwest Territories where population density is exceedingly low, there were 9.50 persons per square mile in Canada as a whole in 1966 compared with 8.66 in 1961 and 6.65 in 1951. The greatest increase in the latest five years was shown by Ontario where there were 2.11 more persons per square mile, followed by Prince Edward Island where there was an increase of 1.79. However, it should be remembered that the population within the

provinces is very unevenly distributed: all provinces with the exception of the Maritimes have large areas almost devoid of population and concentration in other areas is very high. The density of each county and census division, of each city, town and village of 2,500+, and of component parts of metropolitan and other major urban areas in 1966 is given in DBS Census Report 1.1 (Catalogue No. 92-601). Table 18 gives density in the city proper and in the fringe area of each of the five largest metropolitan areas in 1966 compared with 1961 and 1956.

17.—Land Area and Density of Population, by Province, Census Years 1951, 1956, 1961 and 1966

Province or Territory	Land Area	Population 1951		Population 1956		Population 1961		Population 1966	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
	sq. miles	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland (incl. Labrador).	143,045	361,416	2.53	415,074	2.90	457,853	3.20	493,396	3.45
Prince Edward Island.....	2,184	98,429	45.07	99,285	45.46	104,629	47.91	108,535	49.70
Nova Scotia.....	20,402	642,584	31.50	694,717	34.05	737,007	36.12	756,039	37.06
New Brunswick....	27,835	515,697	18.53	554,616	19.93	597,936	21.48	616,788	22.16
Quebec.....	523,860	4,055,681	7.74	4,628,378	8.84	5,259,211	10.04	5,780,845	11.04
Ontario.....	344,092	4,597,542	13.36	5,404,933	15.71	6,236,092	18.12	6,960,870	20.23
Manitoba.....	211,775	776,541	3.67	850,040	4.01	921,686	4.35	963,066	4.55
Saskatchewan.....	220,182	831,728	3.78	880,665	4.00	925,181	4.20	955,344	4.34
Alberta.....	248,800	939,501	3.78	1,123,116	4.51	1,331,944	5.35	1,463,203	5.88
British Columbia..	359,279	1,165,210	3.24	1,398,464	3.89	1,629,082	4.53	1,873,674	5.22
Canada (Exclusive of the Territories)...	2,101,454	13,984,329	6.65	16,049,288	7.64	18,200,621	8.66	19,971,760	9.50
Yukon Territory...	205,346	9,096	0.04	12,190	0.06	14,628	0.07	14,382	0.07
Northwest Territories.....	1,253,438	16,004	0.01	19,313	0.02	22,998	0.02	28,738	0.02
Canada.....	3,560,238	14,009,429	3.93	16,080,791	4.52	18,238,247	5.12	20,014,880	5.62

18.—Land Area and Density of Population in Canada's Five Largest Metropolitan Areas, Census Years 1956, 1961 and 1966

NOTE.—Revised 1966 land area used for density figures for all years.

Metropolitan Area as of 1966	1956		1961		1966		1966 Land Area
	Population	Density per Sq. Mile	Population	Density per Sq. Mile	Population	Density per Sq. Mile	
	No.	No.	No.	No.	No.	No.	sq. mile
Montreal—							
City proper.....	1,116,582	19,271	1,201,559	20,738	1,222,255	21,095	57.94
Fringe area.....	629,487	1,363	909,120	1,968	1,214,562	2,629	461.94
Toronto—							
City proper.....	667,706	19,099	672,407	19,234	664,584	19,010	34.96
Fringe area.....	834,637	1,092	1,152,182	1,507	1,493,912	1,954	764.40
Vancouver—							
City proper.....	365,844	8,443	384,522	8,874	410,375	9,471	43.33
Fringe area.....	299,173	656	405,643	889	481,911	1,056	456.16
Winnipeg—							
City proper.....	255,586	8,463	265,986	8,807	257,005	8,510	30.20
Fringe area.....	157,155	656	210,557	879	251,754	1,051	239.43
Ottawa—							
City proper.....	222,129	5,223	268,206	6,306	290,741	6,836	42.53
Fringe area.....	123,340	431	161,555	565	203,794	712	286.06

Subsection 4.—Sex and Age Distribution

The sex and age distributions of a population are basic to most, if not all, other analyses, as they influence employment, marriage, birth and death rates and a multitude of other factors that are of great importance in the national life.

Sex.—The Canadian population has always been characterized by an excess of males, although this excess has been greatly modified in recent years. Since Confederation, the peak sex ratio for Canada as a whole was 113 reached in 1911, a census year that fell within a period of heavy immigration; the 1966 ratio was 101. In the older settled provinces east of Manitoba the ratio varied between 104 in 1911 and 100 in 1966, but in the western provinces which were being opened to settlement in the early years of the century the ratio changed from a high of 146 in 1911 to 103 in 1966.

The sex distributions and variations in ratio among the provinces are given for the census years 1951, 1956, 1961 and 1966 in Table 19.

**19.—Sex Distribution of the Population and Sex Ratio, by Province,
Census Years 1951, 1956, 1961 and 1966**

Province or Territory	1951			1956		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.
Newfoundland.....	185,143	176,273	105	213,905	201,169	106
Prince Edward Island.....	50,218	48,211	104	50,510	48,775	104
Nova Scotia.....	324,955	317,629	102	353,182	341,535	103
New Brunswick.....	259,211	256,486	101	279,590	275,026	102
Quebec.....	2,022,127	2,033,554	99	2,317,677	2,310,701	100
Ontario.....	2,314,170	2,283,372	101	2,721,519	2,683,414	101
Manitoba.....	394,818	381,723	103	432,478	417,562	104
Saskatchewan.....	434,568	397,160	109	458,428	422,237	109
Alberta.....	492,192	447,309	110	585,921	537,195	109
British Columbia.....	596,961	568,249	105	720,516	677,948	106
Yukon Territory.....	5,457	3,639	150	6,924	5,266	131
Northwest Territories.....	9,053	6,951	130	11,229	8,084	139
Canada.....	7,088,873	6,920,556	102	8,151,879	7,928,912	103
	1961			1966		
	Males	Females	Males to 100 Females	Males	Females	Males to 100 Females
	No.	No.	No.	No.	No.	No.
Newfoundland.....	234,924	222,929	105	252,125	241,271	104
Prince Edward Island.....	53,357	51,272	104	54,974	53,561	103
Nova Scotia.....	374,244	362,763	103	380,517	375,522	101
New Brunswick.....	302,440	295,496	102	310,145	306,643	101
Quebec.....	2,631,856	2,627,955	100	2,885,927	2,894,918	100
Ontario.....	3,134,528	3,101,564	101	3,479,149	3,481,721	100
Manitoba.....	468,503	453,183	103	484,266	478,800	101
Saskatchewan.....	479,564	445,617	108	489,040	466,304	105
Alberta.....	689,383	642,561	107	746,245	716,558	104
British Columbia.....	829,094	799,988	104	948,585	925,089	103
Yukon Territory.....	8,178	6,450	127	7,805	6,577	119
Northwest Territories.....	12,822	10,176	126	15,566	13,172	118
Canada.....	9,218,893	9,019,354	102	10,054,344	9,960,536	101

Age.—The age composition of the Canadian population is, of course, a reflection of past trends in vital rates and immigration. The lower birth rate of the 1961-66 period relative to that of the late 1950s had a considerable impact on the population under 15 years of age in 1966. This age group increased by only 400,000 or 6.5 p.c. between 1961

and 1966 as compared with a gain of 967,000 or 18.5 p.c. in the 1956-61 period. As a result, the proportion that this age group formed of the total population fell from 34.0 p.c. in 1961 to 32.9 p.c. in 1966. The population of working age—those 15-64—increased more substantially, with a gain in excess of 1,200,000 or 11.5 p.c. in the 1961-66 period. Consequently, this age group constituted 59.4 p.c. of the total population in 1966 as compared with 58.4 p.c. five years earlier. Close to one third of the over-all 1961-66 increase in the 15-64 age group occurred among those 15-19 years of age. This young adult age group in 1966 was, of course, comprised of those born in the high birth rate, postwar years. The proportion of persons 65 years of age or over was approximately the same in 1966 as in 1961.

Table 20 shows the population of Canada classified by five-year age groups and by sex for the census years 1951, 1956, 1961 and 1966. The provincial distribution by specified age group is given for 1966 in Table 21.

20.—Male and Female Populations, by Age Group, Census Years 1951, 1956, 1961 and 1966

Age Group	1951		1956		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.	No.	No.
0-4 years.....	879,063	843,046	1,011,835	971,728	1,154,091	1,102,310	1,128,771	1,068,616
5-9 ".....	713,873	683,952	919,952	887,101	1,063,840	1,015,682	1,172,821	1,128,036
10-14 ".....	575,122	555,661	732,032	702,562	948,160	907,839	1,071,255	1,022,258
15-19 ".....	532,180	525,792	586,635	575,666	729,035	703,524	928,958	908,767
20-24 ".....	537,535	551,106	567,179	561,931	587,139	596,507	727,115	734,183
25-29 ".....	552,812	578,403	605,836	592,301	613,897	595,400	619,462	622,332
30-34 ".....	512,557	530,177	602,535	613,750	644,407	627,403	630,498	611,199
35-39 ".....	503,571	495,562	555,763	558,622	631,072	639,852	649,769	636,375
40-44 ".....	445,800	422,767	522,615	502,784	559,996	558,965	624,709	632,319
45-49 ".....	387,708	356,971	455,827	422,988	515,516	499,800	542,752	547,163
50-54 ".....	340,461	322,195	381,835	351,215	442,909	420,279	498,283	489,981
55-59 ".....	292,564	278,126	321,973	307,271	362,145	343,690	413,389	402,911
60-64 ".....	264,324	241,828	265,652	259,265	292,569	291,066	330,006	333,404
65-69 ".....	228,076	205,421	237,551	226,562	239,685	247,417	254,938	276,771
70-74 ".....	160,398	154,674	187,490	183,218	196,076	206,099	198,808	228,399
75-79 ".....	94,130	94,261	113,550	113,948	134,186	140,051	138,967	161,398
80-84 ".....	45,963	50,828	55,636	61,460	69,046	77,771	80,664	96,655
85-89 ".....	17,539	22,060	21,688	26,670	27,178	33,606	33,073	43,717
90 years or over...	5,197	7,728	6,295	9,870	7,946	12,093	10,106	16,052
Totals.....	7,088,873	6,920,556	8,151,879	7,928,912	9,218,893	9,019,354	10,054,344	9,960,536

21.—Age Distribution of the Population, by Province, Census 1966

Province or Territory	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-34 Years
	No.	No.	No.	No.	No.	No.
Newfoundland.....	68,545	67,007	63,531	54,307	35,976	53,299
Prince Edward Island.....	12,587	13,023	12,023	11,061	8,781	11,256
Nova Scotia.....	85,521	87,433	81,600	74,142	52,598	84,372
New Brunswick.....	72,859	76,295	72,908	65,567	42,331	65,198
Quebec.....	632,489	682,874	628,210	566,315	474,158	752,995
Ontario.....	745,744	770,061	688,270	599,197	485,053	881,011
Manitoba.....	102,425	105,627	99,227	87,848	60,899	109,460
Saskatchewan.....	107,515	110,130	103,304	88,412	62,150	104,651
Alberta.....	173,568	179,540	157,658	128,999	102,005	186,681
British Columbia.....	188,773	203,068	182,424	158,406	129,761	227,754
Yukon Territory.....	2,124	1,848	1,437	1,017	1,116	2,330
Northwest Territories.....	5,232	4,051	2,921	2,454	2,470	4,475
Canada.....	2,197,387	2,300,857	2,093,513	1,837,725	1,461,298	2,483,491

21.—Age Distribution of the Population, by Province, Census 1966—concluded

Province or Territory	35-44 Years	45-54 Years	55-64 Years	65-69 Years	70+ Years	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	49,027	43,867	28,665	10,261	18,911	493,396
Prince Edward Island.....	10,912	10,846	8,357	3,595	8,094	108,535
Nova Scotia.....	84,118	81,138	57,838	21,642	45,637	756,039
New Brunswick.....	66,697	60,595	44,020	16,623	33,695	616,788
Quebec.....	730,872	565,813	395,465	133,813	217,841	5,780,845
Ontario.....	941,974	744,385	537,453	199,206	368,516	6,960,870
Manitoba.....	117,065	106,752	79,005	27,264	61,618	955,344
Saskatchewan.....	110,413	103,270	76,617	28,668	60,190	963,066
Alberta.....	184,532	145,224	100,986	55,195	68,815	1,463,203
British Columbia.....	242,415	213,059	149,343	54,902	123,764	1,873,674
Yukon Territory.....	2,016	1,240	732	216	297	14,382
Northwest Territories.....	3,131	1,990	1,229	324	461	28,738
Canada.....	2,543,172	2,078,179	1,479,710	531,709	1,007,839	20,014,880

Subsection 5.—Marital Status

After sex and age, marital status analysis is probably next in importance from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population. If the proportion of females in this group is low, the expected birth rate will be low. In 1966, 61.2 p.c. of all married females were in the 15-44 age group compared with 62.9 p.c. in 1961, 64.0 p.c. in 1951, 61.2 p.c. in 1941 and 63.5 p.c. in 1931.

In the 1961-66 period, the total population 15 years of age or over increased by 11.4 p.c. while the single adult population rose by 18.0 p.c., the married by 8.7 p.c. and the widowed and divorced combined by 12.5 p.c. Thus, the proportion of the adult population who were single increased from 26.5 p.c. in 1961 to 28.0 p.c. in 1966 and the married proportion fell from 66.6 p.c. to 65.0 p.c. in the five-year interval. It is of interest that the 1961-66 decline in the proportion married is attributable largely to smaller proportions in this category in the younger adult age groups. The proportion of those 25 years of age or over who were married was approximately the same at the two census years, i.e., 79 p.c., but the married proportion for the 15-24 age group fell from 23.0 p.c. in 1961 to 21.4 p.c. in 1966.

The marital status of the population in 1966 is shown in Table 22.

22.—Marital Status of the Population, by Age Group and Sex, Census 1966

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
Under 15 years.....	M.	3,372,847	—	—	—	3,372,847
	F.	3,218,910	—	—	—	3,218,910
	T.	6,591,757	—	—	—	6,591,757
15-19	M.	917,589	11,188	160	21	928,958
	F.	839,812	68,692	167	96	908,767
	T.	1,757,401	79,880	327	117	1,837,725
20-24	M.	508,672	217,779	291	373	727,115
	F.	324,762	406,922	1,031	1,468	734,183
	T.	833,434	624,701	1,322	1,841	1,461,298
25-34	M.	265,222	979,302	1,604	3,832	1,249,960
	F.	149,678	1,068,296	7,368	8,189	1,233,531
	T.	414,900	2,047,598	8,972	12,021	2,483,491
35-44	M.	146,523	1,114,948	6,408	6,599	1,274,478
	F.	98,428	1,127,718	31,364	11,184	1,268,694
	T.	244,951	2,242,666	37,772	17,783	2,543,172

22.—Marital Status of the Population, by Age Group and Sex, Census 1966—concluded

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
45-54 years.....	M.	104,744	914,181	15,523	6,587	1,041,035
	F.	89,947	858,387	78,451	10,359	1,037,144
	T.	194,691	1,772,568	93,974	16,946	2,078,179
55-64 "	M.	78,678	627,089	32,782	4,846	743,395
	F.	76,473	511,869	142,234	5,739	736,315
	T.	155,151	1,138,958	175,016	10,585	1,479,710
65-69 "	M.	28,832	199,031	25,593	1,482	254,938
	F.	28,110	149,170	98,172	1,319	276,771
	T.	56,942	348,201	123,765	2,801	531,709
70 years or over.....	M.	50,657	296,036	113,286	1,639	461,618
	F.	56,706	172,609	315,863	1,043	546,221
	T.	107,363	468,645	429,149	2,682	1,007,839
All Ages.....	M.	5,173,764	4,359,554	195,617	25,379	10,054,344
	F.	4,882,826	4,363,663	674,650	39,397	9,960,536
	T.	10,356,590	8,723,217	870,297	64,776	20,014,880

Subsection 6.—Ethnic Groups and Birthplaces

Ethnic Groups.—A population made up of diverse ethnic groups gives rise to political, social and economic problems quite different in nature from those of one with a more homogeneous ethnic composition. These problems are mitigated, however, to the extent that certain groups are more easily integrated than others. It is equally true that the different backgrounds of various ethnic groups lend variety and diversity to the national life.

The two basic groups in the Canadian population are the French and British Isles ethnic groups. The influence of the French in Canada covers a longer period and, with the exception of the 1921 Census, this group has always exceeded in number any of the components of the British Isles ethnic group.

In 1961, each person was asked the question: "To what ethnic or cultural group did you or your ancestor (on the male side) belong on coming to this Continent?". The language spoken at the time by the person, or his paternal ancestor, was used as an aid in determining the person's ethnic group. The classification is given for 1961 in Table 23 with comparative figures for 1951 and 1941. Information on ethnic group was not collected in the 1956 or 1966 Censuses.

23.—Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961

Ethnic Group	1941 ¹	1951	1961	
	No.	No.	No.	p.c.
British Isles	5,715,904	6,709,685	7,996,669	43.8
English.....	2,968,402	3,630,344	4,195,175	23.0
Irish.....	1,267,702	1,439,635	1,753,351	9.6
Scottish.....	1,403,974	1,547,470	1,902,302	10.4
Other.....	75,826	92,236	145,841	0.8
Other European	5,526,964	6,872,889	9,657,195	53.0
Austrian.....	37,715	32,231	106,535	0.6
Belgian.....	29,711	35,148	61,382	0.3
Czech and Slovak.....	42,912	63,959	73,061	0.4
Danish.....	37,439	42,671	85,473	0.5
Finnish.....	41,683	43,745	59,436	0.3
French.....	3,483,038	4,319,167	5,540,346	30.4
German.....	464,682	619,995	1,049,599	5.8
Greek.....	11,692	13,966	56,475	0.3

¹ Excludes Newfoundland.

23.—Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961
—concluded

Ethnic Group	1941 ¹	1951	1961	
	No.	No.	No.	p.c.
Other European—concluded				
Hungarian.....	54,598	80,460	126,220	0.7
Icelandic.....	21,050	23,307	30,623	0.2
Italian.....	112,625	152,245	450,351	2.5
Jewish.....	170,241	181,670	173,344	1.0
Lithuanian.....	7,789	16,224	27,629	0.2
Netherlands.....	212,863	264,287	429,679	2.4
Norwegian.....	100,718	119,266	148,681	0.8
Polish.....	167,485	219,845	323,517	1.8
Romanian.....	24,689	23,601	43,805	0.2
Russian.....	83,708	91,279	119,168	0.7
Swedish.....	85,396	97,780	121,757	0.7
Ukrainian.....	305,929	395,043	473,337	2.6
Yugoslavic.....	21,214	21,404	68,587	0.4
Other.....	9,787	35,616	88,190	0.5
Asiatic	74,064	72,827	121,753	0.7
Chinese.....	34,627	32,528	58,197	0.3
Japanese.....	23,149	21,663	29,157	0.2
Other.....	16,288	18,636	34,399	0.2
Other Origin	189,723	354,028	462,630	2.5
Native Indian and Eskimo.....	125,521	165,607	220,121	1.2
Negro.....	22,174	18,020	32,127	0.2
Other and not stated.....	42,028 ²	170,401	210,382	1.2

¹ Excludes Newfoundland.² Includes 35,416 half-breeds.

Birthplaces.—Table 24 gives the total population of Canada classified by country of birth for the census years 1941, 1951 and 1961, and Table 25 shows the province of birth of Canadian-born persons for the same years. For immigrants, the country of birth was recorded according to boundaries existing at the date of the census. Information on birthplaces was not collected in the 1956 or 1966 Censuses.

24.—Country of Birth of the Population, Census Years 1941, 1951 and 1961

Country	1941 ¹	1951	1961	
	No.	No.	No.	p.c.
Canada.....	9,487,808	11,949,518	15,393,984	84.4
British Isles.....	960,125 ²	912,482	969,715	5.3
Other Commonwealth.....	43,644	20,567	47,887	0.3
Europe.....	653,705	801,618	1,468,058	8.0
Austria.....	50,713	37,598	70,192	0.4
Czechoslovakia.....	25,564	29,546	35,743	0.2
France.....	13,795	15,650	36,103	0.2
Germany.....	28,479	42,693	189,131	1.0
Greece.....	5,871	8,594	38,017	0.2
Hungary.....	31,813	32,929	72,900	0.4
Italy.....	40,432	57,789	258,071	1.4
Netherlands.....	9,923	41,457	135,033	0.7
Poland.....	155,400	164,474	171,467	0.9
Scandinavian countries ³	72,473	64,522	74,616	0.4
Union of Soviet Socialist Republics.....	124,402	188,292	186,653	1.0
Yugoslavia.....	17,416	20,912	50,826	0.3
Other European.....	77,424	97,162	149,306	0.8
Asia.....	44,443	37,145	57,761	0.3
China.....	29,095	24,166	36,724	0.2
Other Asian.....	15,348	12,979	21,037	0.1
United States.....	312,473	282,010	283,908	1.6
Other countries.....	3,612	6,089	16,934	0.1
Totals.....	11,506,655⁴	14,009,429	18,238,247	100.0

¹ Excludes Newfoundland, Norway and Sweden.² Includes the Republic of Ireland.³ Includes persons whose birthplace was not stated.⁴ Includes Denmark, Iceland,

25.—Province of Birth of Canadian-Born Persons, Census Years 1941, 1951 and 1961

Province	1941	1951	1961	Province or Territory	1941	1951	1961
	No.	No.	No.		No.	No.	No.
Nfld.....	..	397,623	497,591	Sask.....	667,832	817,404	1,080,755
P.E.I.....	108,423	117,310	130,123	Alta.....	479,098	649,594	965,425
N.S.....	568,797	660,150	783,848	B.C.....	335,554	514,651	843,596
N.B.....	463,127	549,984	655,066	Y.T. and N.W.T.....	12,267	16,654	26,028
Que.....	3,155,549	3,881,487	4,916,024				
Ont.....	3,123,810	3,645,074	4,667,159				
Man.....	570,349	699,587	878,369	Canada.....	9,487,808 ¹	11,949,515	15,393,984

¹ Includes persons born in Canada whose province of birth was not stated.

Subsection 7.—Religious Denominations

In the 1961 Census, enumerators were instructed to record the specific religious body, denomination, sect or community reported in answer to the question: "What is your religion?". Thus, it should be noted that census figures do not measure church membership or indicate the degree of affiliation with any religious body. As shown in Table 26, close to eight out of ten persons in Canada stated that they belonged to one of the three numerically largest denominations—Roman Catholic, United Church and Anglican—in 1961. The table gives comparative figures for the census years 1941 and 1951; this information was not collected in the 1956 or 1966 Censuses.

26.—Principal Religious Denominations of the Population, Census Years 1941, 1951 and 1961

Religious Denomination	1941	1951	1961	
	No.	No.	No.	p.c.
Adventist.....	18,485	21,398	25,999	0.1
Anglican Church of Canada.....	1,754,368	2,060,720	2,409,068	13.2
Baptist.....	484,465	519,585	593,553	3.3
Greek Orthodox.....	139,845	172,271	239,766	1.3
Jehovah's Witnesses.....	7,007	34,596	68,018	0.4
Jewish.....	168,585	204,836	254,368	1.4
Lutheran.....	401,836	444,923	662,744	3.6
Mennonite ¹	111,554	125,938	152,452	0.8
Mormon.....	25,328	32,888	50,016	0.3
Pentecostal.....	57,742	95,131	143,877	0.8
Presbyterian.....	830,597	781,747	818,558	4.5
Roman Catholic.....	4,806,431	6,069,496	8,342,826	45.7
Salvation Army.....	33,609	70,275	92,054	0.5
Ukrainian (Greek) Catholic ²	185,948	191,051	189,653	1.0
United Church of Canada.....	2,208,658	2,867,271	3,664,008	20.1
Other.....	272,197	317,303	531,287	2.9
Totals.....	11,506,655³	14,009,429	18,238,247	100.0

¹ Includes "Hutterites".

² Includes "Other Greek Catholic".

³ Exclusive of Newfoundland.

Subsection 8.—Languages and Mother Tongues

The term "official language" used by the census refers only to the English and French languages.* "Mother tongue" is the language a person first learned in childhood and still understands. It should be noted that persons indicated as speaking "English only" or

* The British North America Act, 1867 (Sect. 133) makes provision for the use of the English and French languages as follows:—

Either the English or the French Language may be used by any Person in the Debates of the Houses of the Parliament of Canada and of the Houses of the Legislature of Quebec; and both those Languages shall be used in the respective Records and Journals of those Houses; and either of those Languages may be used by any Person or in any Pleading or Process or in issuing from any Court of Canada established under this Act, and in or from all or any of the Courts of Quebec.

The Acts of the Parliament of Canada and of the Legislature of Quebec shall be printed and published in both those Languages.

"French only" with respect to official language may also speak other languages and have a mother tongue other than English or French. The use of the English and French languages in Canada at the time of the 1961 Census is discussed in a special article appearing in the 1965 Year Book at pp. 180-184. Table 27 gives the numerical and percentage distribution of official language by province in 1961; this information was not collected in the 1966 Census.

27.—Numerical and Percentage Distribution of the Population Speaking One, Both or Neither of the "Official" Languages, by Province, Census 1961

NOTE.—See text and footnote on p. 181 re the term "official language".

Province or Territory	English Only		French Only		English and French		Neither English nor French	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Newfoundland.....	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island.....	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia.....	684,805	92.9	5,938	0.8	44,987	6.1	1,277	0.2
New Brunswick.....	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec.....	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario.....	5,548,768	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba.....	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan.....	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta.....	1,253,824	94.1	5,554	0.4	56,920	4.3	15,666	1.2
British Columbia.....	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon Territory.....	13,679	93.5	38	0.3	825	5.6	86	0.6
Northwest Territories.....	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
Canada.....	12,284,762	67.4	3,489,866	19.1	2,231,172	12.2	232,447	1.3

Mother tongues of the population are shown in Table 28. The proportion reporting English as their mother tongue in 1961 was 58.5 p.c. (compared with 59.1 p.c. in 1951), French 28.1 p.c. (29.0 p.c. in 1951) and all other mother tongues 13.5 p.c. (11.8 p.c. in 1951).

28.—Mother Tongues of the Population, Census 1961

Mother Tongue	Number	Percentage of Total	Mother Tongue	Number	Percentage of Total
English.....	10,660,534	58.45	Danish.....	35,035	0.19
French.....	5,123,151	28.09	Swedish.....	32,632	0.18
German.....	563,713	3.09	Serbo-Croatian.....	28,866	0.16
Ukrainian.....	361,496	1.98	Japanese.....	17,556	0.10
Italian.....	339,626	1.86	Lithuanian.....	14,997	0.08
Netherlands.....	170,177	0.93	Flemish.....	14,304	0.08
Indian and Eskimo.....	166,531	0.91	Letish.....	14,062	0.08
Polish.....	161,720	0.89	Estonian.....	13,830	0.08
Magyar.....	85,939	0.47	Syrian and Arabic.....	12,999	0.07
Yiddish.....	82,448	0.45	Romanian.....	10,165	0.06
Chinese.....	49,099	0.27	Icelandic.....	8,993	0.05
Finnish.....	44,785	0.25	Gaelic.....	7,533	0.04
Russian.....	42,903	0.24	Welsh.....	3,040	0.02
Slovak.....	42,546	0.23	Other.....	48,758	0.27
Greek.....	40,455	0.22			
Norwegian.....	40,054	0.22			
			Canada.....	18,238,247	100.00

Subsection 9.—Households and Families

This Subsection contains limited statistics on households and families recorded at the 1966 Census; more detailed information may be found in 1966 Census reports relating to households and families (see also p. 153).

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling.* It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. Every person is a member of some household and the number of households equals the number of occupied dwellings.

The total number and the average size of households are given by province for the census years 1956, 1961 and 1966 in Table 29.

29.—Households and Persons per Household, by Province, Census Years 1956, 1961 and 1966

Province or Territory	Households			Average Persons per Household		
	1956	1961	1966	1956	1961	1966
	No.	No.	No.	No.	No.	No.
Newfoundland.....	78,808	87,940	96,632	5.1	5.0	5.0
Prince Edward Island.....	22,682	23,942	25,360	4.2	4.2	4.2
Nova Scotia.....	162,854	175,341	185,245	4.1	4.0	4.0
New Brunswick.....	120,475	132,715	141,761	4.5	4.4	4.2
Quebec.....	1,001,264	1,191,469	1,389,115	4.4	4.2	4.0
Ontario.....	1,392,491	1,640,881	1,876,545	3.8	3.7	3.6
Manitoba.....	217,964	239,754	259,280	3.7	3.7	3.6
Saskatchewan.....	233,664	245,424	260,822	3.6	3.6	3.6
Alberta.....	294,047	349,816	393,707	3.7	3.7	3.6
British Columbia.....	392,403	459,534	543,075	3.4	3.4	3.3
Yukon and Northwest Territories.....	6,994	7,920	8,931	3.8	4.2	4.3
Canada.....	3,923,646	4,554,736	5,180,473	3.9	3.9	3.7

The average size of the Canadian family† remained the same at 3.9 persons between 1961 and 1966. By province, however, there were some changes, with the average rising in provinces from Ontario west to Alberta and dropping in Newfoundland.

30.—Families and Persons per Family, by Province, Census Years 1956, 1961 and 1966

Province or Territory	Families			Average Persons per Family		
	1956	1961	1966	1956	1961	1966
	No.	No.	No.	No.	No.	No.
Newfoundland.....	82,128	89,267	97,011	4.6	4.7	4.6
Prince Edward Island.....	21,153	21,969	22,728	4.1	4.2	4.2
Nova Scotia.....	154,243	161,894	166,237	3.9	4.0	4.0
New Brunswick.....	116,623	124,653	129,307	4.2	4.3	4.3
Quebec.....	970,414	1,103,822	1,229,301	4.2	4.2	4.2
Ontario.....	1,342,572	1,511,478	1,657,933	3.5	3.6	3.7
Manitoba.....	204,414	215,831	222,735	3.6	3.7	3.8
Saskatchewan.....	205,135	211,776	216,674	3.8	3.8	3.9
Alberta.....	262,922	305,671	331,158	3.7	3.8	3.9
British Columbia.....	346,003	394,023	445,297	3.4	3.6	3.6
Yukon and Northwest Territories.....	5,893	7,060	7,885	4.1	4.3	4.5
Canada.....	3,711,500	4,147,444	4,526,266	3.8	3.9	3.9

Closely related to the number of families per household, and also an indicator of living conditions, is the type of family. In 1966, 96.0 out of every 100 families in Canada were maintaining their own households as compared with 94.3 in 1961 and 92.3 in 1956, an

* A dwelling is defined as a structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall, lobby, vestibule or stairway inside. The entrance must not be through another person's living quarters.

† A family, as defined in the census, consists of a husband and wife (with or without children who have never married) or a parent with one or more children never married, living together in the same dwelling. Adopted children and stepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardianship child or ward under 21 years of age.

apparent steady improvement in living conditions. The families not maintaining their own households fell into two main sub-categories—families related to the head of the household and non-related lodging families. The few who did not fit either of these sub-categories were mostly families of employees living in their employer's household.

There were 8,656,245 children in families in 1966. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. In Table 31, the number of children is classified to show the number in each of four separate age groups corresponding roughly to pre-school-age children, those of elementary school age, those at the secondary school level, and those of college or working age.

31.—Children Living at Home classified by Age Group and by Province, Census 1966

Province or Territory	Under 6 Years	6-14 Years	15-18 Years	19-24 Years	Total Children Living at Home
	No.	No.	No.	No.	No.
Newfoundland.....	81,175	115,328	39,942	19,647	256,092
Prince Edward Island.....	15,141	22,101	8,359	4,270	49,871
Nova Scotia.....	101,646	149,024	53,828	28,521	333,019
New Brunswick.....	86,587	131,907	48,425	25,061	291,980
Quebec.....	753,573	1,150,157	425,237	317,939	2,646,906
Ontario.....	894,669	1,282,401	438,098	255,591	2,870,759
Manitoba.....	122,091	180,586	64,218	35,428	402,323
Saskatchewan.....	127,602	188,243	64,613	27,757	408,215
Alberta.....	206,732	295,528	92,551	43,078	637,889
British Columbia.....	224,892	338,946	115,014	60,309	739,161
Yukon and Northwest Territories.....	8,369	8,376	2,184	1,101	20,030
Canada.....	2,622,477	3,862,597	1,352,469	818,702	8,656,245

Section 2.—Current Population Estimates

Intercensal estimates of the population of Canada and of the provinces have many uses. They are necessary to the calculation of costs of certain economic and social legislation. Business, educational and welfare organizations utilize population estimates in planning future development. They constitute a base for vital statistics rates, per capita figures of production and trade, and other analyses. They also have been found useful for estimating labour force and other population characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply—June 1 of each year. Population estimates by province are also available on a quarter-year basis. The estimates of population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. No complete information is available on emigration. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter IV on Immigration and Citizenship, Part I, Section 3) and from the Registrar-General of Britain the number of emigrants from Canada arriving by sea and air to take up permanent residence in that country. Such data, however, are not available from other countries but, as indicated by partial data from United Nations sources, the proportion of total emigrants to all other countries is small. Family allowances statistics showing the number of migrant families by province are used in estimating interprovincial shifts in population (see Table 3, p. 156).

The following statement shows the data used in preparing the population estimates for the years 1957 to 1968. The next succeeding census serves as a basis for revision of the annual estimates of each intercensal period.

Year	Population at June 1	From June 1 to May 31 of Next Year			
		Births ¹	Deaths ¹	Immigrants	Residual ²
	No.	No.	No.	No.	No.
1956 Census.....	16,081,000	461,000	132,000	255,000	55,000
1957.....	16,610,000	471,000	138,000	194,000	57,000
1958.....	17,080,000	474,000	139,000	116,000	48,000
1959.....	17,483,000	477,000	138,000	106,000	58,000
1960.....	17,870,000	479,000	141,000	89,000	59,000
1961 Census.....	18,238,000	472,000	143,000	70,000	54,000
1962.....	18,583,000*	471,000	146,000	79,000	56,000
1963.....	18,931,000*	459,000	144,000	102,000	58,000
1964.....	19,290,000*	442,000	148,000	121,000	61,000
1965.....	19,644,000*	404,000	150,000	166,000	49,000
1966 Census.....	20,015,000	380,000*	148,000*	214,000	56,000*
1967.....	20,405,000	371,000	156,000	204,000	80,000
1968.....	20,744,000	..	..	..	..

¹ Final figures used where available and registrations substituted for the remaining period.

² Mainly emigration.

32.—Annual Estimates of Population, by Province, as at June 1, 1956-68

NOTE.—At every census the previous post-censal estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for 1956, 1961 and 1966 are census figures. Figures for 1867-1904 will be found in the 1936 Year Book, p. 141; for 1905-30 in the 1946 edition, p. 127; for 1931-40 in the 1952-53 edition, p. 143; and for 1941-55 in the 1961 edition, p. 165. Figures for 1867-1951 will also be found in *Census of Canada 1951*, Vol. X.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1956.....	415	99	695	555	4,628	5,405	850	881	1,123	1,399	12	19	16,081
1957.....	424	99	701	562	4,769	5,636	862	880	1,164	1,482	12	19	16,610
1958.....	432	100	709	571	4,904	5,821	875	891	1,206	1,538	13	20	17,080
1959.....	441	101	719	582	5,024	5,969	891	907	1,248	1,567	13	21	17,483
1960.....	448	103	727	589	5,142	6,111	906	915	1,291	1,602	14	22	17,870
1961.....	458	105	737	598	5,259	6,236	922	925	1,332	1,629	14	23	18,238
1962.....	468	107	746	605	5,371	6,351	936	930	1,369	1,660	15	25	18,583
1963.....	476	108	751	609	5,481	6,481	949	933	1,403	1,699	15	26	18,931
1964.....	483	109	755	611	5,584	6,631	959	942	1,429	1,745	15	27	19,290
1965.....	488	109	756	615	5,685	6,788	965	950	1,450	1,797	14	27	19,644
1966.....	493	109	756	617	5,781	6,961	963	955	1,463	1,874	14	29	20,015
1967.....	500	109	757	620	5,868	7,149	963	958	1,490	1,947	15	29	20,405
1968.....	507	110	760	624	5,927	7,306	971	960	1,526	2,007	15	31	20,744

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, a series of intercensal estimates was begun in 1957. Table 33 shows the estimates for 1967 compared with the census counts of June 1, 1961 and 1966. As in preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1966 and June 1, 1967 were added to the population at the census date and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances made for losses in population by emigration. Also the net in-movement or out-movement caused by internal migration was calculated from family allowances and other data.

33.—Estimated Population of Metropolitan Areas¹ as at June 1, 1967, compared with 1961 and 1966 Censuses

Metropolitan Area	Census June 1, 1961	Census June 1, 1966	Estimate June 1, 1967	Metropolitan Area	Census June 1, 1961	Census June 1, 1966	Estimate June 1, 1967
	'000	'000	'000		'000	'000	'000
Calgary.....	279	331	347	Saint John.....	96	101	101
Edmonton.....	338	401	412	St. John's.....	92	101	103
Halifax.....	184	198	201	Saskatoon.....	96	116	120
Hamilton.....	395	449	463	Sudbury.....	111	117	118
Kitchener.....	155	192	197	Toronto.....	1,825	2,158	2,233
London.....	181	207	215	Vancouver.....	790	892	923
Montreal.....	2,111	2,437	2,489	Victoria.....	154	173	177
Ottawa.....	430	495	508	Windsor.....	193	212	217
Quebec.....	358	413	419	Winnipeg.....	477	509	514
Regina.....	112	131	134				

¹ Areas as of the 1966 Census.

Table 34 gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1967. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 184. These estimates are subject to revision when data from the next census are available.

34.—Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1967

Province or Territory	0-4 Years		5-9 Years		10-14 Years		15-19 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	34.9	33.0	34.3	32.9	32.5	31.6	28.5	28.1
Prince Edward Island.....	6.1	5.9	6.6	6.3	6.2	6.0	5.8	5.7
Nova Scotia.....	41.7	39.5	44.6	42.8	41.9	39.8	38.8	37.7
New Brunswick.....	36.0	33.7	38.7	37.1	37.3	35.9	34.4	33.6
Quebec.....	310.9	293.6	347.1	333.4	328.3	312.8	292.8	288.6
Ontario.....	373.9	354.6	400.5	383.7	385.0	348.9	319.2	307.1
Manitoba.....	49.7	47.6	53.7	51.2	51.0	48.8	45.6	44.6
Saskatchewan.....	52.4	49.9	55.8	53.8	53.6	50.8	46.6	45.3
Alberta.....	85.7	81.6	92.9	89.1	83.9	79.4	68.2	66.8
British Columbia.....	95.1	90.1	106.6	102.9	98.2	93.6	85.6	81.8
Yukon Territory.....	1.1	0.9	1.0	1.0	0.8	0.8	0.6	0.5
Northwest Territories.....	2.7	2.5	2.2	2.1	1.5	1.5	1.3	1.2
Canada.....	1,090.2	1,032.9	1,184.0	1,136.3	1,100.2	1,049.9	967.4	941.0
	20-24 Years		25-34 Years		35-44 Years		45-54 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	19.0	19.6	27.4	26.1	25.4	23.1	23.2	20.9
Prince Edward Island.....	3.8	3.6	5.8	5.4	5.5	5.3	5.4	5.4
Nova Scotia.....	28.0	27.6	42.4	41.5	40.8	41.7	40.5	40.7
New Brunswick.....	23.2	22.5	32.5	32.5	32.4	33.2	30.6	30.5
Quebec.....	247.3	252.1	385.6	386.8	366.8	372.2	286.2	293.1
Ontario.....	261.0	263.4	458.7	455.1	481.6	474.7	384.5	382.8
Manitoba.....	35.4	34.6	55.0	53.7	56.5	57.9	53.1	54.1
Saskatchewan.....	33.4	32.2	52.5	50.9	55.1	53.4	52.3	51.4
Alberta.....	52.8	54.7	95.1	93.7	95.6	91.2	75.5	73.5
British Columbia.....	72.5	70.1	125.6	117.8	127.5	121.9	108.3	111.4
Yukon Territory.....	0.6	0.5	1.3	1.1	1.1	0.9	0.8	0.6
Northwest Territories.....	1.4	1.0	2.5	1.9	1.8	1.3	1.1	0.9
Canada.....	778.4	781.9	1,284.4	1,266.5	1,290.1	1,276.8	1,061.5	1,065.3

34.—Estimated Population classified by Age Group and Sex, by Province, as at June 1, 1967
—concluded

Province or Territory	55-64 Years		65-69 Years		70 + Years		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	15.7	14.0	5.2	5.2	9.4	10.0	255.5	244.5
Prince Edward Island.....	4.5	4.0	1.8	1.7	3.7	4.5	55.2	53.8
Nova Scotia.....	30.6	28.8	10.4	11.2	20.9	25.1	380.6	376.4
New Brunswick.....	22.8	22.3	7.9	8.7	15.7	18.5	311.5	308.5
Quebec.....	199.8	208.5	64.3	73.4	100.4	124.0	2,929.5	2,938.5
Ontario.....	274.6	279.2	95.0	108.2	159.2	218.1	3,573.2	3,575.8
Manitoba.....	40.6	40.2	14.2	14.8	28.8	31.9	483.6	479.4
Saskatchewan.....	41.3	37.5	14.2	13.4	32.5	34.1	489.7	468.3
Alberta.....	54.2	49.7	18.9	17.4	36.0	66.2	986.2	960.8
British Columbia.....	79.7	76.5	27.7	28.5	0.2	0.1	8.2	6.8
Yukon Territory.....	0.5	0.3	0.2	0.1	0.2	0.2	15.8	13.2
Northwest Territories.....	0.8	0.5	0.2	0.1	0.3			
Canada.....	765.1	761.5	260.0	282.7	466.5	562.4	10,247.8	10,157.2

Section 3.—The Native Peoples of Canada

The Indians*

More than 230,900 Canadians are registered as Indians by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. Registered Indians include all persons descended in the male line from a paternal ancestor of Indian identity, who have chosen to remain under Indian legislation. They are grouped, for the most part, into 557 bands and occupy or have access to 2,276 reserves or settlements having a total area of 6,051,327 acres.

* Revised in the Indian Affairs Branch, Department of Indian Affairs and Northern Development, Ottawa.

35.—Indian Land in Reserves and Settlements and Number of Bands, by Province, as at Mar. 31, 1968

Province or Territory	Bands	Reserves	Settle-ments	Total	Total Area
	No.	No.	No.	No.	acres
Prince Edward Island.....	1	4	—	4	2,741
Nova Scotia.....	12	38	—	38	25,571
New Brunswick.....	15	22	—	22	37,584
Quebec.....	39	26	13	39	188,198
Ontario.....	113	166	5	171	1,541,240
Manitoba.....	51	103	—	103	541,649
Saskatchewan.....	67	123	—	123	1,257,163
Alberta.....	41	92	4	96	1,607,625
British Columbia.....	190	1,625	—	1,625	842,527
Yukon Territory.....	15	—	26	26	4,876
Northwest Territories.....	13	—	29	29	2,153
Totals.....	557	2,199	77	2,276	6,051,327

36.—Indian Population, by Province, Selected Years 1949-67

NOTE.—Figures for 1949, 1954 and 1959 resulted from a Departmental census taken every five years until 1959; those for 1961-67 are taken from data kept for administrative purposes by the Indian Affairs Branch.

Province or Territory	1949	1954	1959	1961	1963	1965	1966*	1967
	No.	No.	No.	No.	No.	No.	No.	No.
Prince Edward Island.....	273	272	341	348	374	393	399	409
Nova Scotia.....	2,641	3,002	3,561	3,746	3,935	4,099	4,183	4,287
New Brunswick.....	2,139	2,629	3,183	3,397	3,629	3,824	3,912	4,039
Quebec.....	15,970	17,574	20,453	21,793	23,043	24,446	25,033	25,650
Ontario.....	34,571	37,255	42,668	44,942	47,260	49,556	50,568	51,731
Manitoba.....	17,549	19,684	23,658	25,681	27,778	29,996	30,994	32,227
Saskatchewan.....	16,308	18,750	23,280	25,334	27,672	30,086	31,360	32,579
Alberta.....	13,805	15,715	19,287	20,931	22,738	24,587	25,434	26,440
British Columbia.....	27,936	31,086	36,229	38,616	40,990	43,250	44,205	45,152
Yukon Territory.....	1,443	1,568	1,868	2,006	2,142	2,292	2,337	2,477
Northwest Territories.....	3,772	4,023	4,598	4,915	5,235	5,569	5,739	5,911
Totals.....	136,407	151,558	179,126	191,709	204,796	218,098	224,164	230,902

Administration.—Pursuant to the British North America Act, the administration of Indian affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada in 1867. From January 1950 to December 1965, Indian affairs were the responsibility of a Branch of the Department of Citizenship and Immigration. By legislation (SC 1966, c. 25) a new department was formed whereby the Indian Affairs Branch joined with part of the Department of Northern Affairs and National Resources to become the Department of Indian Affairs and Northern Development.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, eight regional offices, 16 district offices and 50 field agencies. Attached to the headquarters and regional and district offices are specialists in such matters as education, economic development, community development, resource management, social welfare, and engineering and construction. Liaison is maintained with the Medical Services Branch of the Department of National Health and Welfare, the federal agency concerned with the medical care of Indians.

It is the primary function of the Indian Affairs Branch to assist the Indians to administer their affairs in a manner that will enable them to participate fully in the social and economic life of the country. Underlying administrative duties of the Branch include the management of Indian reserves and surrendered lands, the administration of band funds, estates management, enfranchisement of Indians and the administration of treaty obligations.

Five main objectives are being pursued vigorously in an attempt to assist the Indians in adjusting to the pace of social and economic growth. (1) An accelerated program in education places more emphasis on vocational training, retraining for employment, assistance in placement, adult education, kindergartens and a greater use of provincial schools. (2) The program of industrial and resource development, which in the beginning was a

program dependent mainly on the traditional resources of fur, fish, forestry and farming, now affords opportunities in new areas through loans, advisory services and other incentives to foster commercial development and other forms of economic endeavour on and off reserves and to facilitate the relocation of Indian people to places where full employment is available. (3) A \$112,000,000 program of reserve improvement has been instituted to provide better housing, water and sewerage systems, electrification and roads. (4) Indian bands, where possible, are being encouraged to operate on the same basis as local municipalities and, where required, grants are given to meet some of the financial needs of the Indian community. (5) Provincial services to Indians are being extended; where bands so desire, discussions are held with the province concerned with respect to the provision of services additional to those already in effect.

Eight Regional Indian Advisory Councils established by the Department provide machinery for effective consultation with representatives of the Indian people. Each Council is composed of eight to 12 Indians selected by the Indians in the region, as well as representatives of Indian organizations. The consultation procedure is used to interpret federal policies to the Indians and to obtain the views of the Indians on matters of policy, proposed legislation, federal-provincial agreements, new programs and proposed program changes. The National Indian Advisory Board brings together Indians representing all regions. The Board is made up of 18 representatives named by the Regional Councils on a population basis. Its function is to advise the Department on matters of national importance to the Indian people as distinct from matters of regional interest. In addition, Federal-Provincial Co-ordinating Committees are in operation in most provinces. They meet fairly regularly and perform an important function in guiding the plans and programs of the federal and provincial governments in relation to Indians and in establishing effective liaison between the governments and a better understanding of their respective objectives, policies and programs.

Education.—The key to continued progress in Indian education is the active participation of the Indians themselves through their school committees and membership on school boards, strengthened by ever-increasing support from non-federal governments and from professional groups specifically concerned with classroom instruction of Indian pupils. The Indian Affairs Branch maintains and operates a number of schools for Indians but 34,635 of the 66,217 Indian elementary and secondary school pupils now attend non-federal schools, attendance in which has been arranged for the most part through agreements between the Branch and individual school boards. In Manitoba, British Columbia and New Brunswick, however, under agreement with the respective provincial governments, a uniform tuition fee is paid by the Branch for Indian pupils attending schools under the jurisdiction of the province. Federal financial assistance for pupils attending non-federal schools varies from payment of tuition fees to full maintenance. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.

Federal schools for Indian children are in operation in all provinces except Newfoundland and school residences care for orphaned children, children who come from broken homes and for those who, because of isolation or for other reasons, are unable to attend local schools. Standard classroom supplies and authorized textbooks are used in federal schools, which follow generally the curriculum of the province in which they are located.

A two-year kindergarten program has been instituted to give a head start to children who will receive their classroom instruction in a language other than their mother tongue. It has developed very rapidly and it is anticipated that all five-year-olds will be enrolled in school by 1971 and all four-year-olds by 1973. The current kindergarten enrolment is about 4,500.

37.—Enrolment of Indian Pupils in Elementary and Secondary Schools classified by Type of School and by Grade, School Years Ended 1964-65

Year and Type of School	Grade				Special	Absent from Reserve ¹	Total
	Pre-1	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
1963-64.....	3,897	35,453	6,161	4,065	770	4,575	54,921
Federal.....	3,575	24,791	3,089	750	506	—	32,711
Non-federal.....	322	10,662	3,072	3,315	264	4,575	22,210
1964-65.....	4,027	36,229	6,758	4,761	804	4,686	57,265
Federal.....	3,422	24,067	3,292	768	509	—	32,058
Non-federal.....	605	12,162	3,466	3,993	295	4,686	25,207
1965-66.....	3,660	38,929	7,107	5,220	1,013	5,466	61,395
Federal.....	3,093	24,566	3,203	716	462	—	32,040
Non-federal.....	567	14,363	3,904	4,504	551	5,466	29,355
1966-67.....	3,830	40,408	7,453	5,510	1,081	6,157	64,439
Federal.....	2,939	24,672	3,093	427	210	157	31,498
Non-federal.....	891	15,736	4,360	5,083	871	6,000	32,941
1967-68.....	4,531	40,188	7,926	5,967	1,305	6,300	66,217
Federal ²	3,513	24,524	2,879	307	359	—	31,582
Non-federal ³	1,018	15,664	5,047	5,660	946	6,300	34,635

¹ Pupils (and parents) living off the reserves in communities with educational facilities usually attend non-federal schools but school records are not maintained by the Indian Affairs Branch. ² Includes 1,231 non-Indian pupils. ³ Excludes 2,169 Yukon and Northwest Territories pupils.

38.—Enrolment of Indian Pupils in Elementary and Secondary Non-federal Schools classified by Grade and by Province, School Year 1967-68

(Exclusive of the Yukon and Northwest Territories)

Grade	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Pre-grade 1.....	—	43	—	116	277	100	85	107	290	1,018
Grade 1.....	2	33	30	196	447	384	761	619	721	3,193
2.....	2	32	28	168	450	367	543	478	533	2,601
3.....	—	44	60	191	456	274	453	438	593	2,509
4.....	1	31	39	204	515	286	440	453	573	2,547
5.....	1	37	75	270	562	302	390	378	509	2,524
6.....	1	28	68	301	455	245	364	330	498	2,290
7.....	7	76	59	325	592	234	353	441	561	2,648
8.....	4	49	58	328	453	144	261	311	791	2,399
9.....	—	49	46	192	784	211	279	337	579	2,477
10.....	2	33	42	152	527	224	158	182	386	1,706
11.....	—	14	16	89	246	116	89	127	219	916
12.....	1	3	10	7	155	50	67	107	130	530
13.....	—	—	—	—	23	—	—	—	8	31
Special.....	—	5	2	22	315	75	84	118	325	946
Absent from reserve.....	30	110	60	500	2,600	700	700	400	1,200	6,300
Totals.....	51	587	593	3,061	8,857	3,712	5,027	4,826	7,921	34,635

39.—Indian Students in Post-Secondary and Vocational Training, by Province, School Year 1967-68

(Exclusive of the Yukon and Northwest Territories)

Classification	P.E.I., N.S. and N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
University.....	17	45	25	10	19	26	23	165
Teacher training.....	—	6	7	—	—	—	2	15
Nurse's training.....	3	4	9	3	1	3	5	28
Vocational.....	26	171	592	315	309	155	513	2,081
Upgrading.....	23	159	1,091	275	370	113	193	2,224
Totals.....	69	385	1,724	603	699	297	736	4,513

Resources and Industrial Development.—Some 180,000 of Canada's 230,902 Indian people reside on reserves or Crown lands and depend on renewable resources for much of their income. The Indian Affairs Branch is steadily expanding its economic and resource utilization programming to help them improve their methods and develop new resource potential through loans, grants, technical advice and specialized training. The Branch also works, both formally and informally, in close co-operation with other federal departments, provincial governments and private organizations to establish wide-ranging resource development programs for Indian people. The latest program to be introduced (late 1968) is designed to assist Indian fishermen on the British Columbia coast to improve or replace their vessels and equipment and to provide them with training in the latest techniques of fish harvesting. Over the next five years the plan should benefit about 1,200 fishermen at a cost of approximately \$4,600,000.

Continued interest in Canadian wild furs on world markets encouraged 9,194 Indian trappers to harvest 86,430 pelts valued at \$2,876,507 in the 1967-68 season. Also, about 4,500 Indian fishermen harvested more than 10,000,000 lb. of fish for domestic and foreign markets, in addition to their own requirements. Indian farmers numbered 2,128, of whom 828 have been given financial assistance for capital improvements, purchase of equipment, breaking of land and operation expenses. Under the rotating herd program, which includes 7,431 animals in herds of up to 50 animals, some 307 farmers have received herds.

Forestry operations by Indian people in 1967-68 produced a total of 332,121 cunits* valued at \$6,247,321, of which 230,297 cunits were softwood (consisting of sawlogs 148,650, pulpwood 39,277, fuelwood 38,144, poles and piling 1,183 and other wood products such as bolts, mining timber, etc., 3,043) and 101,824 cunits were hardwood, two thirds of which was fuelwood. Approximately 284,000 trees were planted on 545 acres of reserve lands for reforestation purposes. Up to mid-1968, forest inventory and management plans were made for 61 Indian reserves and forest fire protection agreements covering reserve lands were negotiated or renewed with all provinces except Quebec and Nova Scotia. Another 54 reserves had been examined by consulting companies to identify potentials for land and resource development.

Indians own and operate 17 tourist and outfitting establishments; these provide employment for 209 individuals, some of whom are included among the 519 licensed Indian guides in Canada. In addition, Indians own and operate 22 campgrounds, 23 picnic sites, eight marinas, nine beaches, 43 cottage subdivisions, 10 tourist accommodations and 22 operations that are combinations of such facilities.

There are approximately 5,983 Indians producing crafts, 66 of whom operate their own retail outlets; the value of their output exceeded \$1,289,000 in the year ended Mar. 31, 1968. About 7,400 Indian people are actively involved in 136 co-operatives and credit unions; sales of producer co-operatives in 1967 exceeded \$5,600,000.

*A unit of stacked wood containing 100 cu. feet of solid volume within its outside dimensions.

In 1967-68, 613 permits and leases covering 1,966,351 acres of land were in effect on 110 reserves in Ontario, Manitoba, Saskatchewan, Alberta and British Columbia for exploration and production of oil and gas. Revenue derived for Indian bands through bonuses, rentals and royalties amounted to \$4,200,572 and revenue derived from mining, including the sale of sand and gravel, amounted to \$231,245.

Community Development.—The community development program launched by the Indian Affairs Branch in 1964 has led to much closer involvement of the Indian people in the management of their own affairs. In their efforts to accept such responsibility, many Indian bands across the country are developing their own municipal-type administration. Fifty-eight (24 of Indian status) community development workers hired by the Indian Affairs Branch and 33 hired by provincial governments are assisting and encouraging the Indian people to plan their own future. A grants-to-bands program enables bands to gain program experience and assists them financially; expenditure on the program increased from \$71,065 in 1965 to \$507,602 in 1967-68.

Federal-provincial community development agreements to extend provincial services to the Indian people exist with Ontario and Alberta and such services are supplied through informal arrangements in other parts of Canada. Costs are shared on a population basis where both Indians and non-Indians are involved.

A program to develop and perpetuate Indian culture through encouraging Indian fine arts and crafts, literature, dancing, folk songs and related activities has been conducted since 1965. Incentives include grants, subsidies and scholarships to individuals, groups and organizations for the development of their creative and performing talents.

The Federal Government assists in the physical development of Indian communities by providing technical services, through the Engineering and Construction Division of the Indian Affairs Branch, for community planning on Indian reserves, housing accommodation, water and sanitation services, electrification and construction and maintenance of roads and bridges, etc. Community planning service is given either directly through the efforts of the community concerned, indirectly through consultant planners or through provincial or regional planning offices. In 1966 an expenditure of \$112,000,000 was allotted for the physical improvement of Indian reserves.

Three housing programs on reserves and one off-reserve program are under way, summarized as follows:—

- | | |
|--|---|
| 1. Subsidy housing program | Direct subsidy by the Federal Government. |
| 2. Band-administered housing program . . . | Indian councils may, by band council resolution, request authority to administer federal appropriation, either as the sole source of financing or in conjunction with band funds. |
| 3. Indian on-reserve housing program | Individual housing loans from the Central Mortgage and Housing Corporation as a sole source of financing or in conjunction with federal subsidy. |
| 4. Off-reserve housing program | Indians living away from reserves may secure mortgage funds from the Central Mortgage and Housing Corporation or approved lenders in conjunction with forgivable ten-year second-mortgage funds from the Indian Affairs Branch. |

There were 2,005 houses constructed on Indian reserves in the year ended Mar. 31, 1968.

In recent years, emphasis has been placed on overcoming the isolation of many reserves by the building of roads to facilitate movement between Indian and non-Indian communities, the upgrading of roads on reserves adjacent to urban communities, the participation of Indian children in off-reserve school programs, the commuting of Indian people to and from centres of employment, and the development and marketing of reserve resources. Where economically feasible, electric power is being extended to all Indian reserves and potable water and adequate sanitation facilities are also assured on all reserves.

Welfare.—The Indian Affairs Branch administers programs and financially supports and promotes expansion of those administered by provincial organizations to meet welfare needs of Indian individuals and families. Federal-provincial agreements are pursued in collaboration with the Department of National Health and Welfare to give effect to Part II of the Canada Assistance Plan in order that Indian people may participate in the broad range of welfare programs established in the provinces. In Ontario, provincial social assistance and child welfare programs are available to Indian communities through implementation of an agreement which provides for the extension of the province's total welfare program. Services for the protection and care of dependent and neglected Indian children are provided through agreements with the Yukon Territory, the Provinces of Manitoba and Nova Scotia and an arrangement with British Columbia. In provinces where no formal arrangement exists, child welfare authorities intervene in serious neglect situations at the request of the Indian Affairs Branch.

Dependent Indian and certain categories of non-Indian persons living on the reserves are given social assistance by the Indian Affairs Branch. Standards established in the provinces apply in assessing the need and determining the amounts of assistance granted to individuals and families.

Financial responsibilities assumed by the Indian Affairs Branch for the welfare of Indians include maintenance of children in foster homes and institutions, services provided by accredited child welfare organizations, assistance to maintain elderly and physically incapacitated adults in institutions and boarding homes and to enable physically handicapped Indians to participate in rehabilitation programs. Welfare programs administered by other governmental organizations for which Indians are eligible include: family allowances, youth allowances, old age security and guaranteed income supplement administered by the Department of National Health and Welfare; old age assistance and blind and disabled persons' allowances administered by the Governments of British Columbia, Manitoba, Quebec, Nova Scotia and Prince Edward Island; family benefits in Ontario; needy mothers' allowances in Quebec; and social assistance pursuant to the Nova Scotia Social Assistance Act, Pt. I.

The Eskimos*

Canada's Eskimo population is growing rapidly. More than 15,000 now live in scattered camps and settlements of 25 to 500 people, mainly in the Northwest Territories but also in Arctic Quebec (3,000), Labrador (1,000) and northern Manitoba (365). The factors of severe climate and isolation have in the past complicated the initial problems of ensuring that all Eskimo people had food, access to health care and warm shelter but good progress has now been made in providing for these basic needs. Medical care is the responsibility of the Department of National Health and Welfare (see p. 276); the Department of Indian Affairs and Northern Development provides education, welfare, economic development, municipal services and housing, often using the Government of the Northwest Territories as its agent to provide these services.

Although some Eskimo families still live in hunting camps and take their living from the land, the trend is strongly toward community living centred around the local school, nursing station, trading store and co-operative building. Most Eskimos now live in permanent housing and their acceptance of new ways that are of advantage to them is symbolized by the fact that in some communities the dog-team, traditionally used for transportation, is being replaced by the skidoo.

With changing conditions, education is a vital factor in the lives of the Eskimo people, both young and old. Although only 15 p.c. of the Eskimo children of school age were enrolled in school in 1953, the system has expanded to such an extent that in 1967-68 about 3,694 Eskimo children were registered in 64 schools in the Northwest Territories and Arctic Quebec, this number representing nearly 95 p.c. of the Eskimo school-age population.

* Prepared by the Information Services Division of the Department of Indian Affairs and Northern Development in close co-operation with the Director and officers of the Northern Administration Branch.

For the most part, children attend school in their home communities up to grade six and then go to larger communities for senior grades and for vocational education. When Eskimo children must leave home to continue their education, the Department provides transportation, room and board in pupil residences, clothing and a small weekly allowance. Senior secondary education is available at six high schools in the Northwest Territories: vocational courses at Yellowknife, N.W.T., and pre-vocational courses at Churchill, Man. In many cases, a special curriculum allows older boys and girls with limited academic training to spend half days on academic upgrading and half in occupational classes.

Eskimo students who attain senior matriculation may attend university through a system of loans and grants established by the Government of the Northwest Territories for all territorial residents. Grants cover transportation, tuition and textbooks, and loans may be obtained for costs of maintenance. Although there are only two Canadian Eskimos now attending university, others are advancing into senior high school grades and are potential university material in the years immediately ahead.

In the vocational field, those who have adequate academic education may enter technical institutes, teachers' colleges, schools of nursing, business colleges or trade schools in the provinces or they may take on-the-job training. There is a large demand for Eskimos with education and training backgrounds of a high level and it is difficult to find enough of them to fill all requests. During the past year, 115 Eskimos were enrolled in training courses outside the Northwest Territories in such varied courses as commercial pilot nursing aide, fish processing, clerk-typist, barbering, boat building, handicraft management, heavy-duty equipment operating, classroom assistant, and art.

Apprenticeship offers another opportunity for training. Apprentice tradesmen with little education take academic upgrading at night and on-the-job training during the day and at intervals are examined on knowledge of their trade in Eskimo. Throughout the North, there are Eskimo men working at various levels of apprentice training, as heavy equipment operators, plumbers, carpenters and mechanics. They hold positions as interpreters and clerks in retail and co-operative stores and in government offices; one young man is the Area Administrator at Spence Bay.

The objective of the Department, in co-operation with other federal departments in the North, is to have 75 p.c. of staff positions in the Territories filled by local residents by 1977.

In vocational classes, Eskimo girls train as clerical assistants, stenographers, hairdressers, nursing aides and commercial cooks. Both boys and girls who are interested in teaching begin their careers in settlement schools as classroom assistants, dividing the day between academic studies and work with young Eskimo pupils. Special care is given to the development of curriculum for northern schools and guides are prepared for such subjects as trapping, fur preparation and the care and use of firearms and outboard motors. By 1972 the Department expects to have sufficient classrooms and pupil residence accommodation to provide for every school-age Eskimo child in the Northwest Territories and Arctic Quebec. This will require the construction of more than 200 classrooms and the provision of 1,000 beds in pupil residences.

The adult education program is designed to inform those of the older generation who feel themselves cut off from children in school. Much emphasis in this area deals with the terms and maintenance of the new housing program. Although permanent houses were introduced in 1959-60, Eskimo families could afford to pay very little toward housing costs. Even families who could purchase these small one-room houses often could not afford the high cost of fuel, light and water. It became apparent that a public housing program was needed to assist the Eskimo people and, in October 1965, government approval was obtained for a five-year program to supply three-bedroom rental houses, allocated on the basis of family need. Rent is scaled according to income, ranging from welfare recipients' payments of \$2 per month up to the maximum monthly rental of \$67. Services include heating, electricity, water delivery, sewage disposal, and basic furniture. Construction of three-bedroom houses began in 1966 on Baffin Island and in Arctic Quebec.

and in the summer of 1968, 140 houses were shipped to the Eastern Arctic, 20 to Arctic Quebec and 100 to the Western Arctic. The rental housing program has now been completed for 15 communities. Credits are given to tenants in new houses for extra rental payments and for improvement or additions to the houses, and 33 p.c. of the rent previously paid is credited toward the purchase price if tenants decide to buy.

To help solve the problem of fuel oil for heat and electricity, bulk storage tanks have been installed in many locations and more are being added each year; in 1968 facilities were completed at Broughton Island, Arctic Bay and Grise Fiord. Eleven tanks were purchased in 1968 for erection in the Eastern Arctic and a contract let for eight tanks for the Western Arctic, to be completed by early 1969.

In Eskimo communities, the Eskimo people are encouraged to assume management of their own affairs through local or regional councils; practical assistance, advice and financial support are given by the Department of Indian Affairs and Northern Development. In over 40 communities a development fund acts as a catalyst in social and economic development. The full range of social services applicable to all Canadians is available to the Eskimo people—family allowances, old age and disability pensions and blind persons' allowance. A child welfare program cares for children who are neglected or whose parents are temporarily unable to care for them. Social assistance provides for persons whose income from employment is insufficient to meet their needs and those of their dependants. Medical and public health services are provided for Eskimos not included under provincial arrangements and who are unable to provide for themselves (see p. 276). Eskimos in hospitals in the south are kept in touch with distant family members through tape-recorded messages and medical progress reports. When medical treatment is completed the Department of Indian Affairs and Northern Development is responsible for the return of Eskimo patients to their homes. Rehabilitation may include adjustment training in sheltered employment and the adaptation of artificial limbs and equipment.

The base of the economy in Eskimo communities is gradually broadening. A number of successful Eskimo co-operatives have been established by the Department, engaging in the production of arctic char and arctic trout, fur garment manufacturing, logging, lumbering and house construction, and continuing economic surveys are made to pinpoint local resources that have possibilities of development. Eskimo sculptures, prints and fine crafts have gained worldwide recognition and bring \$1,250,000 annually to Eskimo artists. Art is a major part of the rich heritage of these people and is supported by cultural exchanges of films, radio programs and exhibitions. Literature in the Eskimo language is being collected and a regular publication *Inuttituut* is printed in syllabic script and distributed to Eskimo families in the North. The first volume of a pocketbook series printed in syllabics and entitled *The Autobiography of John Ajaruaq*, was published in the fall of 1968.

Although many communities are enjoying greater cash income through the use of local resources and the capacities of their people, the need for the establishment of new industries to provide employment continues to grow. The young people especially, as they leave school, must have opportunities for employment to relieve them of following the traditional harsh and marginal existence on the land. This might be done by giving financial incentives to secondary industry willing to establish in the North. If employment can be provided in this way as well as through primary industry based on mineral resources, the Eskimo population, with its innate ability to live comfortably in the Arctic, can be a tremendous asset to Canada.

Section 4.—Statistics of World Population

World population figures given in Table 40 are from the *United Nations Population and Vital Statistics Report* for April 1968 and, except as otherwise noted, are mid-year estimates for 1966. Area figures are from the *United Nations Statistical Yearbook 1967*.

Estimated Population of the World by Continents.—The following statement presents estimates of the 1966 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries because they include, in addition, adjustments for over- and under-enumeration, over- and under-estimation, and data for categories of population not regularly included in the official figures.

<i>Continental Division</i>	<i>Population</i>
	'000
Africa.....	318,000
North America.....	299,000
South America.....	169,000
Asia.....	1,864,000
Europe.....	452,000
Oceania.....	17,800
Union of Soviet Socialist Republics.....	233,000
WORLD TOTAL.....	3,353,000
Commonwealth countries (as at November 1968).....	844,000

40.—Areas and Populations of the Countries or Areas of the World

NOTE.—Status of independency or dependency is as at Nov. 1, 1968. Members of the Commonwealth and countries for which the British or Commonwealth members are responsible are indicated with an asterisk (*).

<i>Continent and Country</i>	<i>Area</i>	<i>Population</i>
	sq. miles	'000
Africa		
SOVEREIGN COUNTRIES		
Algeria.....	919,595	12,147
*Botswana.....	231,805	580
Burundi.....	10,747	3,274
Cameroon.....	183,569	5,350
Central African Republic.....	240,535	1,437
Chad.....	495,755	3,361
Congo (Brazzaville).....	132,047	850
Congo, Democratic Republic of.....	905,568	15,986 ¹
Dahomey.....	43,484	2,410
Equatorial Guinea.....	10,831	272
Fernando Póo, incl. Annobón.....	785	74
Rio Muni, incl. Corisco and Elobeyas.....	10,045	198
Ethiopia.....	471,778	23,000
Gabon.....	103,347	468
*Gambia, The.....	4,361	336
*Ghana.....	92,100	7,945
Guinea.....	94,926	3,608
Ivory Coast.....	124,504	3,920
*Kenya.....	224,960	9,643
*Lesotho.....	11,720	860
Liberia.....	43,000	1,090
Libya.....	679,362	1,677
Madagascar.....	226,658	6,200
*Malawi.....	45,483	4,035
Mali.....	478,767	4,654
Mauritania.....	397,956	1,070
*Mauritius incl. dependencies.....	789	780
Morocco.....	171,835	13,725
Niger.....	489,191	3,433
*Nigeria.....	356,669	59,700
Rwanda.....	10,169	3,204 ¹
Senegal.....	75,750	3,580
*Sierra Leone.....	27,699	2,403
Somalia.....	246,201	2,580
South Africa, excl. Walvis Bay.....	471,445	18,298
Sudan.....	967,500	13,840
†Swaziland (U.K.).....	6,704	875

For footnote, see end of table, p. 200.

40.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
Africa—concluded		
SOVEREIGN COUNTRIES—concluded		
Togo.....	21,622	1,680
Tunisia.....	63,379	4,460
*Uganda.....	91,134	7,740
United Arab Republic.....	386,662	30,147
*United Republic of Tanzania.....	362,821	11,833
Tanganyika.....	361,800	11,486
Zanzibar.....	1,020	347
Upper Volta.....	105,869	4,955
*Zambia.....	290,586	3,827
Non-sovereign countries		
Angola, incl. Cabinda (Port.).....	481,354	5,225
*British Indian Ocean Territory (U.K.).....	30	2
Cape Verde Islands (Port.).....	1,557	228
Comoro Islands (Fr.).....	838	225
French Territory of the Afars and the Isaas (formerly French Somaliland) (Fr.)...	8,494	81 ²
French Southern and Antarctic Territories (Fr.).....	2,918	"
Itini (Sp.).....	579	53
Mozambique (Port.).....	302,330	7,040
Portuguese Guinea (Port.).....	13,948	528
Réunion (Fr.).....	969	408
*St. Helena, excl. dependencies (U.K.).....	47	5
*Ascension and Tristan da Cunha.....	74	1
São Tomé and Príncipe (Port.).....	372	60
*Seychelles (U.K.).....	145	48
*Southern Rhodesia (U.K.).....	150,333	4,400
South West Africa, incl. Walvis Bay (S.A.).....	318,261	584
Spanish North Africa (Sp.).....	12	160
Spanish Sahara (Sp.).....	102,703	48
America, North		
SOVEREIGN COUNTRIES		
*Barbados.....	166	245
*Canada.....	3,851,809	20,050
Costa Rica.....	19,575	1,486
Cuba.....	44,218	7,800
Dominican Republic.....	18,816	3,754
El Salvador.....	8,260	3,037
Guatemala.....	42,042	4,575
Haiti.....	10,714	4,485
Honduras.....	43,277	2,363
*Jamaica.....	4,232	1,839
Mexico.....	761,604	44,145
Nicaragua.....	50,193	1,720
Panama, excl. Canal Zone.....	29,209	1,287
Canal Zone.....	553	56
*Trinidad and Tobago.....	1,080	995
United States of America.....	3,615,211	196,920
*Antigua.....	171	60
*Dominica.....	290	68
*Grenada.....	133	97
*St. Kitts-Nevis-Anguilla.....	138	58
*St. Lucia.....	238	103
Non-sovereign countries		
*Bahamas (U.K.).....	4,403	140
*Bermuda (U.K.).....	20	50
*British Honduras (U.K.).....	8,867	109
*British Virgin Islands (U.K.).....	59	9
*Cayman Islands (U.K.).....	100	9
Greenland (Den.).....	840,004	41

For footnotes, see end of table, p. 200.

40.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
America, North—concluded		
Non-sovereign Countries—concluded		
Guadeloupe (Fr.).....	687	319
Martinique (Fr.).....	425	327
*Montserrat (U.K.).....	38	14
Netherlands Antilles (Neth.).....	371	210
Puerto Rico (U.S.).....	3,435	2,668
St. Pierre and Miquelon (Fr.).....	93	5
*St. Vincent.....	150	90
*Turks and Caicos Islands (U.K.).....	166	6
United States Virgin Islands.....	133	50
America, South		
SOVEREIGN COUNTRIES		
Argentina.....	1,072,073	22,691
Bolivia.....	424,165	3,748
Brazil.....	3,286,488	83,175 ^a
Chile.....	292,258	8,780
Colombia.....	439,737	18,596
Ecuador.....	109,484	5,326 ^a
*Guyana.....	83,000	662
Paraguay.....	157,048	2,094
Peru.....	496,225	12,012 ^b
Uruguay.....	72,173	2,749
Venezuela.....	352,145	8,921
Non-sovereign Countries		
*British Antarctic Territory.....	4,618	2
Falkland Islands excl. dependencies.....	35,135	37
French Guiana (Fr.).....	63,037	350
Surinam (Neth.).....		
Asia		
SOVEREIGN COUNTRIES		
Afghanistan.....	250,000	15,397
Bahrain.....	231	193
*Bhutan.....	18,147	750
Burma.....	261,790	25,246
Cambodia.....	69,898	6,277
*Ceylon.....	25,332	11,491
China (mainland).....	3,691,523	710,000
China (Taiwan).....	13,885	12,810
*Cyprus.....	3,572	603
*India, incl. Jammu and Kashmir.....	1,261,817	498,680
Indonesia, excl. West Irian.....	575,896	107,000
West Irian.....	159,376	800
Iran.....	636,296	25,283
Iraq.....	167,848	8,380
Israel.....	7,992	2,629
Japan.....	142,727	98,865
Jordan.....	37,738	2,040
Korea, incl. area of demilitarized zone.....	85,032	41,486
North Korea.....	46,540	12,400
Republic of Korea.....	38,022	29,086
Kuwait.....	6,178	491
Laos.....	91,429	2,700
Lebanon.....	4,015	2,460
*Malaysia—		
East Malaysia.....	77,730	1,427
Sabah.....	29,388	565
Sarawak.....	48,342	862
West Malaysia.....	50,700	8,298

For footnotes, see end of table, p. 200.

40.—Areas and Populations of the Countries or Areas of the World—continued

Continent and Country	Area	Population
	sq. miles	'000
Asia—concluded		
SOVEREIGN COUNTRIES—concluded		
Maldiv Islands.....	115	101
Mongolia.....	604,250	1,140
Muscat and Oman.....	82,000	565
Nepal.....	54,362	10,294
*Pakistan, excl. Jammu and Kashmir.....	365,529	105,044
Philippines.....	115,831	33,477
Qatar.....	8,500	71
Saudi Arabia.....	830,000	6,870
*Sikkim.....	2,744	180
*Singapore.....	224	1,914
Southern Yemen ⁷	111,075	1,146
Syria.....	71,498	5,400
Thailand.....	198,457	31,698
Trucial Oman.....	32,278	130
Turkey.....	301,382	31,910
In Asia.....	292,261	29,190
In Europe.....	9,121	2,720
Viet-Nam.....	127,242	36,043
North Viet-Nam.....	61,294	19,500
Republic of Viet-Nam.....	65,948	16,543
Yemen.....	75,290	5,000
Non-sovereign countries		
Bonin Islands (U.S. Military).....	40	^s
*Brunei ⁴ (U.K.).....	2,226	104
*Hong Kong (U.K.).....	399	3,732
Macao (Port.).....	6	^s
Palestine (former mandated territory U.K.).....	10,460	1,912 ²
Gaza Strip.....	146	440
Portuguese Timor (Port.).....	5,763	560
Ryukyu Islands (U.S. Military).....	848	943
Europe		
SOVEREIGN COUNTRIES		
Albania.....	11,100	1,914
Andorra.....	175	14
Austria.....	32,374	7,290
Belgium.....	11,781	9,528
Bulgaria.....	42,823	8,257
Czechoslovakia.....	49,371	14,240
Denmark.....	16,629	4,797
Finland.....	130,120	4,637
France.....	211,208	49,400
Germany—		
Eastern Germany.....	41,661	15,988
Federal Republic of Germany.....	95,743	57,485
East Berlin.....	156	1,079
West Berlin.....	186	2,191
Greece.....	50,944	8,614
Holy See.....	^s	1
Hungary.....	35,919	10,179
Iceland.....	39,769	196
Ireland.....	27,135	2,884
Italy.....	116,304	51,962
Liechtenstein.....	61	20
Luxembourg.....	998	335
*Malta.....	122	317
Monaco.....	^s	23
Netherlands.....	12,978	12,455
Norway.....	125,182	3,753
Poland.....	120,665	31,698
Portugal, incl. the Azores and Madeira Islands.....	35,510	9,335
Romania.....	91,699	19,143

For footnotes, see end of table, p. 200.

40.—Areas and Populations of the Countries or Areas of the World—concluded

Continent and Country	Area	Population
	sq. miles	'000
Europe—concluded		
SOVEREIGN COUNTRIES—concluded		
San Marino.....	24	18
Spain, incl. the Balearic and Canary Islands.....	194,885	31,871
Sweden.....	173,666	7,808
Switzerland.....	15,941	5,999
*United Kingdom of Great Britain and Northern Ireland.....	94,221	54,744
England and Wales.....	58,348	48,075
Northern Ireland.....	5,462	1,478
Scotland.....	30,411	5,191
Yugoslavia.....	98,766	19,735
NON-SOVEREIGN COUNTRIES		
*Channel Islands (U.K.).....	75	115
Faeroe Islands (Den.).....	540	37
*Gibraltar (U.K.).....	2	25
*Isle of Man (U.K.).....	227	50
Svalbard and Jan Mayen Islands (Nor.).....	24,101	3 ⁹
Oceania		
SOVEREIGN COUNTRIES		
*Australia, excl. aborigines.....	2,967,894	11,541
*Nauru.....	8	6
*New Zealand.....	103,736	2,676
*Western Samoa.....	1,097	130
NON-SOVEREIGN COUNTRIES		
American Samoa (U.S.).....	76	27
*British Solomon Islands (U.K.).....	11,500	141
*Canton and Enderbury Islands (U.K. and U.S.).....	27	3
*Christmas Island (Aust.).....	52	1
*Cocos (Keeling) Islands (Aust.).....	5	1
*Cook Islands (N.Z.).....	90	19
*Fiji (U.K.).....	7,055	478
French Polynesia (Fr.).....	1,544	95
*Gilbert and Ellice Islands (U.K.).....	342	54
Guam (U.S.).....	212	79
Johnston Island (U.S.).....	8	2
Midway Islands (U.S.).....	2	93
New Caledonia (Fr.).....	7,336	1,582
*New Guinea (Aust.).....	92,160	76
*New Hebrides (U.K. and Fr.).....	5,700	5
*Niue Island (N.Z.).....	100	1
*Norfolk Island (Aust.).....	14	94
Pacific Islands (U.S.).....	687	601
*Papua (Aust.).....	86,100	2
*Pitcairn Island (U.K.).....	2	77
*Tokelau Islands (N.Z.).....	4	1
*Tonga ¹ (U.K.).....	270	3
Wake Island (U.S.).....	3	77
Wallis and Futuna Islands (Fr.).....	77	8
Union of Soviet Socialist Republics		
Union of Soviet Socialist Republics.....	8,649,539	233,105

¹ African population only. ² Latest official estimate. ³ Fewer than 500 persons. ⁴ Britain responsible for defence and certain external relations. ⁵ Excluding Indian jungle population. ⁶ Excluding nomadic Indian tribes. ⁷ Former British dependency of Aden and the Protectorate of South Arabia. ⁸ Less than one square mile. ⁹ Latest official estimate; inhabited only during winter season; Norwegian population only.

CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

PART I.—IMMIGRATION AND EMIGRATION*

Section 1.—Immigration Policy and Administration

Policy.—Traditionally, Canada has sought to increase its population through immigration in order to expand the domestic market, reduce per capita costs of administration, stimulate economic activity by providing new skills, ideas and enthusiasm, and support a higher level of cultural independence and creativity. Canadian experience indicates that a substantial volume of immigration is highly desirable.

New population cannot be added haphazardly without regard to their means of subsistence or their effect on Canadian life. Technological change and the development of Canadian society to its present complex state require that, to be able to establish themselves successfully, new settlers must be economically competitive in terms of education, training, skills and personal qualities. Over the years, Canada has endeavoured to acquire immigrants who were adaptable to Canadian life. Such persons, finding familiar institutions in Canada, feel more at home and this assists in their establishment in the new life they find here. Canada makes every effort to sustain the movement of immigrants from countries having like economic, social and political backgrounds. On the other hand, qualified people from other countries can integrate successfully into Canadian society and the Immigration Regulations recognize this principle. People anywhere in the world have an opportunity to immigrate to Canada if they demonstrate their suitability for life in this country and are likely to become established without hardship to themselves or disruption to the communities in which they settle.

In addition, Canada has on many occasions since the end of World War II sanctioned the entry of thousands of refugees. This is a humanitarian movement and is tangible evidence of Canada's recognition of its responsibilities in the international community. A conservative estimate of the number of refugees admitted from 1945 to the end of 1968 is 350,000, which includes the group of over 8,000 Czechoslovakians who left their own country following its invasion by the Soviet Union in August 1968.

* Sections 1 and 2 of this Part were prepared in co-operation with the Information Service, Department of Manpower and Immigration, Ottawa. The history of immigration and the Immigration Act and Regulations up to the mid-1950s is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. 176-178 of the 1959 edition.

On Oct. 1, 1967, Canada adopted new Immigration Regulations which are applied universally; these give more recognition to family relationship than the former Regulations and are more closely attuned to Canada's economic needs. These new Regulations evolved from the White Paper on Immigration, tabled in the House of Commons on Oct. 14, 1966. The proposals provided, for the first time, uniform standards for the admission of non-dependent relatives sponsored by Canadian citizens, regardless of the immigrant's citizenship or country of residence. On Oct. 20, 1966, a Joint Committee of the Senate and the House of Commons was established to study and report upon the White Paper and upon two earlier reports on immigration matters submitted to Parliament in 1965 and 1966 by Mr. Joseph Sedgwick, Q.C. The Committee considered representations by members of Parliament, representatives of provincial governments, private organizations and other members of the Canadian public during the last months of 1966 and the early months of 1967.

It became evident during the meetings of the Committee that many representatives of the Canadian public had reservations about details of the White Paper proposals. The suggestions offered to the Committee were studied in the Department and in April 1967 the Minister presented new proposals to which the Committee gave its approval.

The new Regulations were authorized by Order in Council dated Aug. 16, 1967 (PC 1967/1616), effective as of Oct. 1, 1967. These Regulations present in detail the principles involved in selection of immigrants, whereas the previous Regulations defined who was admissible to Canada only in very general terms. They also indicate the factors that immigration officers will take into account in assessing potential immigrants and the comparative importance of these factors. The new Regulations formally confirm that Canadian citizens or permanent residents of Canada are entitled to bring their dependants to Canada. The privilege of citizens or permanent residents in applying for other more distant relatives to come to Canada is extended to all areas of the world and new classes of relatives become eligible for this assistance; in the past there were geographical limitations on certain categories of relatives.

The assessment system for potential immigrants is based on the following factors: (1) *Education and Training*—up to 20 assessment units to be awarded on the basis of one unit for each successful year of formal education or occupational training; (2) *Personal Assessment*—up to 15 units on the basis of the immigration officer's assessment of the applicant's adaptability, motivation, initiative and other similar qualities; (3) *Occupational Demand*—up to 15 units if demand for the applicant's occupation is strong within Canada and whether the occupation is skilled or unskilled; (4) *Occupational Skill*—up to 10 units for the professional, ranging down to one unit for the unskilled; (5) *Age*—10 units for applicants under age 35 with one unit deducted for each year over age 35; (6) *Arranged Employment*—10 units if the applicant has a definite job arranged in Canada; (7) *Knowledge of French and English*—up to 10 units, dependent upon the degree of fluency in French and/or English; (8) *Relative*—up to five units if the applicant has a relative in Canada able to help him become established but unprepared or unable to sponsor or nominate him; and (9) *Employment Opportunities in Area of Destination*—up to five units if the applicant intends to go to an area of Canada where there is a generally strong demand for labour.

The new Regulations make a clear distinction between dependants and relatives entering the working force. Thus, in the future, there will be three categories of immigrants—"sponsored dependants", "nominated (non-dependent) relatives", and "independent applicants". A "dependant" is defined for immigration purposes as: husband or wife, fiancé or fiancée; unmarried son or daughter under age 21; parent or grandparent over age 60, or younger if widowed or unable to work; an orphaned brother, sister, nephew, niece or grandchild under age 18. Provision is also made for an adopted child and, where the only dependant is a husband or wife, for the nearest living relative. An application for a dependant will be dealt with irrespective of whether he is in Canada or abroad and irrespective of the financial circumstances of the sponsor. He will be admitted to Canada provided he is in good health and of good character.

Canadian citizens and permanent residents may nominate non-dependent relatives for immigration to Canada. The "nominated relative" category includes son or daughter over age 21, married son or daughter under age 21, brother or sister, parent or grandparent under age 60, nephew, niece, uncle, aunt or grandchild. The responsibilities of the nominator include willingness and ability to provide accommodation, care and maintenance for the person applied for and to otherwise assist him to become established. The nominator will be required to sign such an undertaking for a period of five years. Because of the assistance provided by the nominator in Canada, the nominee will be assessed on only some of the selection factors—education, personal qualities, occupational demand, age and occupational skill. On the general assumption that a Canadian citizen usually will be better established in Canada than a more recent arrival and hence in a better position to give his relative more assistance, a slightly higher preference will be given to a relative nominated by a Canadian citizen than to one nominated by a permanent resident.

To qualify for admission to Canada, an "independent applicant" will normally have to obtain 50 of the 100 assessment units available. However, the new selection system is considerably less rigid than the previous practice. Whereas in the past an individual could have been rejected on account of a single factor, such as lack of education, the new Regulations use a combination of factors in such a way that some of them may compensate

Edmonton welcomes a recent influx of young people from other countries, many from Czechoslovakia, who are quietly settling into life in that thriving city, learning English, working and raising their families. As in other cities across the country, basic English or French language courses, held in the evenings, assist these new Canadians in becoming established in their chosen surroundings.



for relatively low qualifications in others. The major purpose of the new standards, as it was with the old, is to select immigrants who can make a successful adjustment to life in Canada and thereby contribute to the country's progress.

The main factors for successful establishment are education, personal qualities and occupational demand. As far as the education of the individual is concerned, the principle of successful educational achievement in the immigrant's home has been adopted since it has been found impracticable to equate educational standards in many countries to Canadian standards. In assessment of his personal qualities, the applicant will be considered as to his chances for success in Canada in terms of his economic establishment and his personal satisfaction as well as on the composition and the attitudes of his whole family. The personal assessment process also includes the function of counselling and the applicant will be informed about the market in different areas of Canada for his skills and about the difficulties he may encounter in adjusting to the Canadian way of life. The demand in Canada for the applicant's skill or occupation is given due importance. The Department is responsible for immigration but is equally concerned with manpower and is obliged to discourage immigration for the applicant with an occupation for which there is little or no demand in this country. Where there are shortages of labour in certain industries, Canadian employers or provincial officials may interview candidates abroad for such industries and channel them to the Department's visa offices but these candidates also must comply with the new selection standards.

The other six selection criteria have individually lesser weight but in total are equal to the three main factors. In considering adaptability in a new environment, occupational skill is important. A person's skill is usually acquired at a price in financial terms. It is an investment and the higher the investment usually the higher the skill and thus a greater gain to Canada. Age must be taken into account when considering adaptability in a new environment. On average, younger people adjust more easily and for this reason the age group up to 35 years is assigned the maximum number of assessment units, with one unit deducted for each year over 35. However, an older person will not be refused on this factor if he has other assets such as highly developed skills which are in demand in Canada. Credit will be given to an applicant who has a firm commitment from a Canadian employer because this will assist his economic establishment during the initial period after arrival. Economic and social adjustment of a new immigrant is greatly facilitated by knowledge of the languages of his adopted country. As a consequence, units of assessment are given to applicants for the degree of their fluency in either English or French or both. An applicant whose mother tongue is other than English or French may be given some credit for even a partial knowledge of either or both of the two languages. In fact, it is possible that such an applicant may obtain more assessment units on the language factor than a unilingual applicant who speaks only English or French. If an applicant has a relative in Canada who is able to help him become established, credit will be given for this factor since the presence of a relative is a definite asset in the adjustment process.

No one will be compelled to go to any particular area in Canada but, if a prospective immigrant is counselled by an immigration officer to go to an area which offers the best opportunity for him and is prepared to accept that advice, he will be awarded the units appropriate for that area. If the over-all demand for labour is higher in any one area in Canada than in others, the total assessment of the immigrant destined to that area will reflect that high demand. The assessment of individual areas in Canada as to their over-all demand for labour, and the assessment of national demand for individual occupations will be conducted on a continuous basis so that selection officers overseas will be in possession of up-to-date information at all times.

An innovation in the new Regulations is the provision for the admission to Canada for permanent residence of persons who have come as visitors. However, since open acceptance of applications from visitors would be inefficient and would give an undue advantage to some people, a visitor is not given any credit for arranged employment in Canada, so that he must qualify on other factors. Conditions of entry must have been

observed and, in particular, the applicant must not have taken employment in Canada if not authorized to do so. Foreign students studying at recognized Canadian institutions will be regarded as any other visitors applying for permanent residence in Canada. However, if foreign students are under an obligation to their government to return to their own country, they will not be permitted to apply for permanent residence in Canada. Applications for permanent residence from seamen on shore leave will not be accepted under the new Regulations.

A sponsor whose application for a dependant is refused will have the right to appeal to the newly constituted independent Immigration Appeal Board. On July 6, 1966, the Minister introduced a Bill in the House of Commons "to make provision for appeals to an Immigration Appeal Board in respect of certain matters relating to immigration". The Bill was passed in the House of Commons on Mar. 1 and given Royal Assent on Mar. 22, 1967. The Act provides for a new Immigration Appeal Board which is a Court of Record entirely separate from the Department and with the authority to enforce its orders. The Act, in addition to providing for appeals against deportation orders, also makes provision for sponsors in Canada to appeal to the Board against the refusal of admission to relatives overseas. The categories of relatives whose refusal may be appealed will be designated by the Governor in Council.

Administration.—The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The creation of the Department of Manpower and Immigration, which came into being officially on Oct. 1, 1966, resulted in a substantial reorganization of the Immigration Division. A former important part of the activities of the Division, that of the placement and settlement of immigrants in employment in Canada, was transferred to the Canada Manpower Division of the Department. Immigration officers who were trained placement and settlement specialists were transferred with this function to the Canada Manpower Division. The reorganized Immigration Division has three main Branches. The Programs and Procedures Branch is responsible for the long- and short-range planning of immigration policies and programs, interpretation of the Immigration Act and Regulations and immigration policies, the co-ordination of immigration policies developed internally, functional support in respect of the transportation and initial reception of immigrants in Canada and liaison with transportation companies. The Home Services Branch is responsible for the disposition of difficult individual immigration cases, the provision of procedural guidance to field officers, the formulation of policies and guidelines on the enforcement aspects of immigration operations, and the provision of technical advice on procedures relating to the admission of immigrants and non-immigrants. The Foreign Branch is responsible for the management of the Overseas Service, uniform application of selection standards, promotional activities abroad, implementation of approved programs abroad and the proper counselling and direction of immigrants.

There are 29 visa offices located abroad at London, Liverpool, Leeds, Birmingham, Glasgow, Belfast, Dublin, Paris, Bordeaux, Marseille, Brussels, Berne, The Hague, Copenhagen, Cologne, Hamburg, Stuttgart, Vienna, Stockholm, Lisbon, Madrid, Rome, Milan, Athens, Cairo, Tel Aviv, New Delhi, Tokyo and Hong Kong. The Regional Immigration Headquarters for Continental Europe in Geneva is an administrative centre which does not issue visas. Four offices in the United States—at New York, Chicago, San Francisco and Denver—and a sub-office at Los Angeles, furnish information and counselling but do not issue visas. In addition, the services of immigration officers are available in Canberra, Kingston (Jamaica), Beirut, Islamabad, Manila and Port-of-Spain, and information offices, visited at intervals by immigration officers based in Stockholm, are maintained in Oslo and Helsinki. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding their prospects for successful establishment. Examination of immigrants and visitors is carried out at 552 ports of entry on the Canadian coasts, at points along the International Boundary and at certain airports and inland offices.

Section 2.—Immigration Statistics

Table 1 shows the number of immigrants arriving in Canada in each year since 1913, the peak year of immigration into the country. Table 2 shows the number and distribution of immigrants in the population of Canada on the latest decennial census date, June 1, 1961, by period of arrival.

1.—Immigrant Arrivals, 1913-67

NOTE.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913.....	400,870	1924.....	124,164	1935.....	11,277	1946.....	71,719	1957.....	282,164
1914.....	150,484	1925.....	84,907	1936.....	11,643	1947.....	64,127	1958.....	124,851
1915.....	36,665	1926.....	135,982	1937.....	15,101	1948.....	125,414	1959.....	106,928
1916.....	55,914	1927.....	158,886	1938.....	17,244	1949.....	95,217	1960.....	104,111
1917.....	72,910	1928.....	166,783	1939.....	16,994	1950.....	73,912	1961.....	71,689
1918.....	41,845	1929.....	164,993	1940.....	11,324	1951.....	194,391	1962.....	74,586
1919.....	107,698	1930.....	104,806	1941.....	9,329	1952.....	164,498	1963.....	93,151
1920.....	138,824	1931.....	27,530	1942.....	7,576	1953.....	168,868	1964.....	112,606
1921.....	91,728	1932.....	20,591	1943.....	8,504	1954.....	154,227	1965.....	146,758
1922.....	64,224	1933.....	14,382	1944.....	12,801	1955.....	109,946	1966.....	194,743
1923.....	133,729	1934.....	12,476	1945.....	22,722	1956.....	164,857	1967.....	222,876

Table 2 shows that, according to census figures, 1,507,116 persons reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These immigrants constituted about 75 p.c. of the total number of immigrants who arrived in Canada during that period. According to the records of the Department of Manpower and Immigration, 2,033,598 persons entered Canada as immigrants during the period 1946-61. The difference between this total and the 1,507,116 postwar immigrants reported in the 1961 Census, amounting to 526,482 persons, represents the losses due to death and emigration among the postwar immigrant arrivals up to June 1961. Since this difference is arrived at by comparing statistics derived from two different sources, it must be taken as only an approximate measure of these losses. It is estimated that deaths of immigrants arriving since 1946 would not exceed 86,000 by June 1961. Hence it would appear that roughly 440,000 emigrated in the period between January 1946 and June 1961, or slightly more than one fifth of the total arrivals over this period.

The 440,000 postwar immigrants who appear to have emigrated from Canada up to June 1961 would thus constitute a little over half the total estimated emigration from Canada since 1946, according to data on emigration used in the preparation of annual population estimates. In this connection it might be mentioned that a substantial element in total Canadian emigration is the movement of Canadian-born persons to the United States, some 387,000 entering the United States as immigrants between July 1946 and July 1961 according to the United States Immigration Service records (see p. 215).

2.—Immigrant Population, by Period of Immigration and by Province, Census 1961

Province or Territory	Before 1930	1931-40	1941-45	1946-50	1951-55	1956-61 ¹	1946-61 ¹	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	1,356	339	338	1,317	1,230	1,689	4,236	6,269
Prince Edward Island.....	1,170	217	117	439	452	597	1,488	2,992
Nova Scotia.....	14,752	2,165	1,079	4,434	5,281	6,457	16,172	34,168
New Brunswick.....	10,496	1,451	886	3,184	2,887	4,379	10,450	23,283
Quebec.....	121,164	14,202	5,321	38,452	87,873	121,437	247,762	388,449
Ontario.....	462,705	41,959	15,190	169,044	323,528	340,731	833,303	1,353,157
Manitoba.....	101,758	4,259	1,483	15,925	21,134	25,439	62,498	169,998
Saskatchewan.....	116,192	3,170	1,034	8,124	9,497	11,372	28,993	149,389
Alberta.....	156,324	8,446	2,420	25,326	48,263	47,970	121,659	288,749
British Columbia.....	229,790	11,300	4,498	37,296	65,947	74,301	177,544	423,132
Yukon Territory.....	867	81	42	265	626	833	1,724	2,714
Northwest Territories.....	425	114	37	178	472	737	1,387	1,963
Canada.....	1,216,999	87,703	32,445	303,984	567,190	635,942	1,507,116	2,844,263

¹ Up to the date of the Census, June 1, 1961.

Recent Immigration.—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences are seldom immediately decisive. News of good economic conditions in Canada pre-disposes people in favour of this country but, because the immigration process usually takes several months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

In the early 1960s, the Canadian economy experienced a levelling-off, and even a retrenchment in some areas, from its previous high level of activity and this was reflected in the country's intake of immigrants. However, this interval of economic adjustment lasted only a short time and by 1963 immigration had again risen to more normal levels. In that year 93,151 immigrants came to Canada compared with 74,586 the year before. Promotional efforts abroad were intensified. A resident immigration officer was posted to Madrid to service immigration applications in Spain and area offices were established to enable teams of immigration officers to make regular visits to adjoining countries in an effort to broaden the base from which immigrants were selected.

In the following year, the number of immigrants admitted to Canada totalled 112,606, a 21-p.c. increase over 1963. By nationality, British immigrants constituted the largest number, followed by Italians and citizens of the United States. This increase was attributable to two principal factors—an intensification of promotional and recruiting activities in the main source countries, and an expansion of examination and selection facilities into areas from which Canada received few immigrants before the establishment of the immigration regulations that came into effect early in 1962. The achievements of 1964 were accomplished despite strong competition in Europe for skilled and educated workers and new postwar levels of prosperity. It is, therefore, of considerable significance that, of the 56,190 immigrants who entered the Canadian labour force in that year, 59 p.c. were in the more skilled categories; 13,177 were in the managerial and professional categories, compared with 10,799 in 1963. In 1964, a resident immigration officer was posted to Marseille to expand facilities in France.

In 1965, Canada's demand for skilled immigrant workers once again exceeded the supply. Although skilled workers could be absorbed in large numbers, the need for unskilled workers diminished and for this reason the Immigration Branch continued to emphasize the selection of immigrants possessing professional or other qualifications that would enable them to become established soon after their arrival. Most of the traditional immigrant source countries, particularly in Europe, continued to enjoy buoyant economic conditions. Skilled workers were much in demand and there was strong competition among immigration countries for a share of those skilled workers who were interested in emigration. The number of immigrants admitted to Canada totalled 146,758, a 30-p.c. increase over the preceding year. Immigrant workers who arrived from abroad numbered 74,195, of whom 67 p.c. were in the more skilled categories; those in the managerial and professional categories numbered 18,103. As in the previous year, the major source countries were Britain, Italy and the United States. During 1965, Canadian immigration facilities abroad were substantially improved and expanded. Resident officers were posted to Milan, Italy, and Bordeaux, France, and offices at five other locations were modernized and refurnished. The decision was also made to establish a Regional Headquarters for Continental Europe in Geneva, Switzerland.

The rising trend of immigration continued in 1966. In all, 194,743 immigrants came to Canada in that year, an increase of 32 p.c. over 1965. Immigrant workers numbered 99,210, of whom 74 p.c. were in the more skilled categories compared with 67 p.c. in 1965. Those in managerial or professional categories numbered 25,929, which was almost 43 p.c. above 1965 and nearly double the 1964 figure. Of the total of 194,743 immigrants, 63,291 came from Britain, 31,625 from Italy and 17,514 from the United

States. There were significant developments in immigration administration and policy during the year. Briefly, as a result of the reorganization of several Federal Government departments, the Immigration Branch of the former Department of Citizenship and Immigration was amalgamated with large segments of the Department of Labour to form the new Department of Manpower and Immigration. The principal advantages to this alignment are that immigration is now more closely identified with national manpower policies, and the extensive services of the Canada Manpower Division in counselling, placing and assisting workers are now fully available to new immigrants (see p. 205). A new policy for dealing with requests from visitors for permanent residence in Canada was introduced with good effect.

In 1967, the second largest number of immigrants arrived in Canada since the end of the Second World War. Of the 222,876 immigrants who came—representing an increase of 14 p.c. over 1966—119,539 were workers of whom 87 p.c. were in the more skilled categories compared with 74 p.c. in 1966. Those in the managerial or professional categories numbered 30,853, a figure 19 p.c. above 1966. Of the total of 222,876 immigrants, 62,420 came from Britain, 30,055 from Italy and 19,038 from the United States.

Analyses of the content of the immigration movement during the years 1965, 1966 and 1967 are given in Tables 3 to 9, and the numbers of persons deported from Canada for various reasons for the same years in Table 10.

Table 3 classifies immigrant admission by country of last permanent residence. During the three-year period shown, 30.2 p.c. of the immigration flow came from Britain and the Republic of Ireland, 43.0 p.c. from Continental Europe, 9.2 p.c. from the United States and 17.6 p.c. from all other countries.

3.—Immigrant Arrivals by Country of Last Permanent Residence, 1965-67

NOTE.—Comparable figures from 1946 are given in the corresponding table of previous Year Books beginning with the 1951 edition.

Country	1965	1966	1967	Country	1965	1966	1967
No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth—				Europe—concluded			
British Isles—				Finland.....	504	540	791
England.....	28,820	43,561	43,481	France.....	5,225	7,872	10,122
Northern Ireland.....	1,934	2,400	2,644	Germany.....	8,927	9,263	11,779
Scotland.....	8,363	16,077	14,953	Greece.....	5,642	7,174	10,650
Wales.....	682	1,192	1,263	Hungary.....	453	448	573
Lesser Isles.....	58	61	79	Italy.....	26,398	31,625	30,055
Totals, British Isles....	39,857	63,291	62,420	Netherlands.....	2,619	3,749	4,401
Australia.....	2,150	3,329	4,967	Poland.....	1,975	1,678	1,470
Cyprus.....	239	303	399	Portugal.....	5,734	7,930	9,500
Guyana.....	609	628	736	Scandinavian Countries—			
Hong Kong.....	4,155	3,710	5,767	Denmark.....	859	1,097	1,244
India.....	2,241	2,233	3,966	Other.....	692	1,121	1,573
Malta.....	1,055	569	679	Spain.....	837	1,161	1,372
New Zealand.....	561	728	1,201	Switzerland.....	2,169	2,982	3,738
Pakistan.....	423	566	648	Yugoslavia.....	1,230	1,502	2,089
West Indies.....	2,926	3,746	7,962	Other.....	330	442	601
Other Commonwealth.....	863	1,389	1,764	North America—1			
Totals, Commonwealth.	55,079	80,492	90,509	Mexico.....	147	114	318
Republic of Ireland.....	861	1,774	2,181	United States.....	15,143	17,514	19,038
Africa¹.....	1,613²	1,210³	2,054⁴	Other.....	221	291	513
Asia¹.....	2,157	3,878	5,322	South America¹.....	1,862	1,976	2,354
Europe—1				Middle East—1			
Austria.....	1,472	2,313	2,745	Egypt.....	1,378	1,854	1,728
Belgium.....	977	1,385	1,485	Israel.....	822	1,488	2,345
				Lebanon.....	602	889	1,096
				Other.....	825	976	1,227
				Other Countries.....	5	5	3
				Totals, All Countries....	146,758	194,743	222,876

¹ Excludes Commonwealth countries.
892 from the Republic of South Africa.

² Includes 545 from the Republic of South Africa.
⁴ Includes 1,366 from the Republic of South Africa.

³ Includes

Of the immigrant arrivals in 1967, 40.0 p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 41.0 p.c. in 1955 and 36.9 p.c. in 1955, 19.2 p.c. were born in Italy or Greece, 8.7 p.c. in Germany, France or the Netherlands, 7.2 p.c. in the United States, 5.6 p.c. in Spain or Portugal and 3.8 p.c. in Poland or Yugoslavia.

4.—Immigrant Arrivals, by Country of Birth, 1965-67

NOTE.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1965	1966	1967	Birthplace	1965	1966	1967
No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth—				Europe—concluded			
British Isles—				Czechoslovakia.....	385	523	785
England.....	24,233	37,447	37,138	Denmark.....	873	1,091	1,229
Northern Ireland.....	2,143	2,668	2,855	Finland.....	584	631	942
Scotland.....	8,838	16,471	15,575	France.....	3,396	5,498	7,112
Wales.....	1,127	1,722	1,674	Germany.....	6,964	7,263	8,327
Lesser Isles.....	64	75	132	Greece.....	5,972	7,567	11,035
Totals, British Isles.....	36,405	58,383	57,374	Hungary.....	1,144	1,360	1,514
Australia.....	2,039	2,735	4,072	Italy.....	28,118	33,492	31,658
Canada.....	1,043	1,043	967	Netherlands.....	2,327	3,385	3,955
Cyprus.....	296	360	424	Norway.....	324	526	556
Guyana.....	745	864	960	Poland.....	2,477	2,214	2,221
Hong Kong.....	1,176	1,434	2,611	Portugal.....	6,505	8,812	10,478
India.....	3,040	3,561	5,924	Romania.....	424	454	644
Malta.....	1,124	627	730	Spain.....	1,419	1,882	1,916
New Zealand.....	620	773	1,165	Switzerland.....	1,231	1,798	2,540
Pakistan.....	459	629	752	Union of Soviet Socialist			
West Indies.....	3,844	5,376	9,512	Republics ²	543	635	698
Other Commonwealth.....	1,899	1,514	1,889	Yugoslavia.....	3,259	4,417	6,289
Totals, Commonwealth.....	52,690	77,299	86,380	Other.....	548	774	1,031
Republic of Ireland.....	1,443	2,538	2,845	Middle East—¹			
Africa ¹	1,442	2,290	3,603	Egypt.....	1,653	2,231	2,289
Asia— ¹				Israel.....	490	883	1,296
China.....	3,376	2,910	4,142	Lebanon.....	492	721	862
Japan.....	221	503	838	Turkey.....	915	981	1,054
Other.....	2,052	3,534	4,748	Other.....	561	788	1,118
Europe—¹				North America—¹			
Austria.....	803	907	1,099	Mexico.....	147	130	277
Belgium.....	696	972	1,093	United States.....	12,017	14,148	16,115
				Other.....	279	368	647
				South America¹.....	977	1,177	1,526
				Other.....	11	11	14
				Grand Totals.....	146,758	194,713	222,876

¹ Excludes Commonwealth countries.

² In both Europe and Asia.

5.—Immigrant Arrivals, by Citizenship, 1965-67

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Country of Citizenship	1965	1966	1967	Country of Citizenship	1965	1966	1967
No.	No.	No.	No.	No.	No.	No.	No.
Australia.....	2,322	3,233	4,673	China.....	3,375	2,978	4,044
Austria.....	770	856	1,044	Czechoslovakia.....	80	129	343
Belgium.....	645	875	1,052	Denmark.....	874	1,079	1,236
Britain and colonies.....	42,785	65,176	64,719	Egypt.....	1,270	1,680	1,798
Central America.....	25	41	43	Finland.....	558	614	930
Ceylon.....	141	180	145	France.....	3,691	5,896	7,940

5.—Immigrant Arrivals, by Citizenship, 1965-67—concluded

Country of Citizenship	1965	1966	1967	Country of Citizenship	1965	1966	1967
	No.	No.	No.		No.	No.	No.
Germany.....	7,031	7,249	8,224	Rhodesia.....	56	90	62
Greece.....	6,181	7,714	11,169	South Africa.....	581	881	1,308
Haiti.....	98	126	378	South America.....	928	1,368	2,205
Hungary.....	592	598	705	Spain.....	1,414	1,931	1,868
India.....	2,386	2,775	5,029	Sweden.....	240	383	603
Ireland, Republic of.....	1,311	2,272	2,761	Switzerland.....	1,144	1,650	2,397
Israel.....	837	1,455	2,337	Trinidad and Tobago.....	735	1,106	2,392
Italy.....	28,397	33,977	32,108	Turkey.....	662	672	764
Jamaica.....	1,606	2,460	4,437	Union of Soviet Socialist Republics.....	159	265	301
Japan.....	188	500	858	United States.....	13,857	16,154	18,013
Lebanon.....	637	892	1,062	Yugoslavia.....	1,886	2,897	5,366
Luxembourg.....	11	25	21	Other African.....	90	184	340
Mexico.....	130	105	264	Other Asian.....	2,441	4,153	5,671
Morocco.....	775	309	749	Other European.....	712	659	780
Netherlands.....	2,525	3,671	4,354	Stateless.....	2,526	2,808	2,298
New Zealand.....	642	784	1,145	Other.....	47	39	1,411
Norway.....	317	524	547				
Pakistan.....	470	672	798				
Poland.....	2,027	1,758	1,562				
Portugal.....	6,583	8,900	10,622				
				Totals.....	146,758	194,743	222,876

Sex distribution of recent immigrant arrivals is shown in Table 6. In the three years 1965-67, adult males comprised 37.2 p.c. of the immigrants, adult females 35.1 p.c. and children under 18 years of age the remaining 27.7 p.c. Without relation to age, 48.6 p.c. of the newcomers were females.

6.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1965-67

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Item	1965	1966	1967
	No.	No.	No.
Males.....	74,707	100,349	115,158
Under 18 years.....	21,761	28,724	29,905
Adult.....	52,946	71,625	85,253
Females.....	72,051	94,394	107,718
Under 18 years.....	20,561	27,521	28,404
Adult.....	51,490	67,073	79,314
Totals, Immigrants.....	146,758	194,743	222,876

The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1957 to 1964. However, the trend was then reversed and in 1965-67 the number of males exceeded the number of females. In 1967, in the single category, males were predominant up to age 40, whereas in the married category females exceeded males by 1,790, in the widowed category by 3,419 and in the divorced and separated category by 493. Of all persons arriving in 1967 who were 15 years of age or over, 54.1 p.c. were married, 41.6 p.c. were single and 4.3 p.c. were widowed, divorced or separated.

7.—Marital Status of Immigrant Arrivals, by Sex and Age Group, 1967

Sex and Age Group	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
Males—						
0-14 years.....	26,601	—	—	—	—	26,601
15-19 ".....	7,276	104	—	—	—	7,380
20-24 ".....	17,056	4,862	11	31	16	21,976
25-29 ".....	11,539	11,315	9	141	55	23,059
30-39 ".....	4,760	17,166	34	312	117	22,389
40-49 ".....	597	7,011	44	182	66	7,900
50-59 ".....	115	2,931	97	48	33	3,224
60 years or over.....	59	2,018	496	29	27	2,629
Totals, Males.....	68,003	45,407	691	743	314	115,158
Females—						
0-14 years.....	25,095	5	—	—	—	25,100
15-19 ".....	6,148	2,005	—	—	—	8,153
20-24 ".....	12,205	11,454	9	52	24	23,744
25-29 ".....	6,924	11,354	38	168	55	18,539
30-39 ".....	3,308	13,016	114	341	98	16,877
40-49 ".....	701	5,331	368	238	90	6,728
50-59 ".....	263	2,541	1,084	170	126	4,184
60 years or over.....	217	1,491	2,497	113	75	4,393
Totals, Females.....	54,861	47,197	4,110	1,082	468	107,718

Destinations and Occupations.—Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1965-67—53.5 p.c. of all the males and 54.2 p.c. of all the females. Quebec was the second province of destination, receiving 21.1 p.c. of the males and 19.7 p.c. of the females, followed by British Columbia with 12.2 p.c. of the males and 12.8 p.c. of the females. The proportions intending to settle in the Prairie Provinces were 10.8 p.c. and 11.0 p.c., respectively, and in the Atlantic Provinces 2.3 p.c. and 2.1 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

8.—Intended Province or Destination of Male and Female Immigrants Admitted to Canada, 1965-67

Province or Territory	1965			1966			1967		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	303	301	604	422	383	805	505	479	984
Prince Edward Island.....	63	74	137	73	68	141	79	68	147
Nova Scotia.....	867	745	1,612	1,156	928	2,084	1,349	1,057	2,406
New Brunswick.....	573	501	1,074	670	613	1,283	685	637	1,322
Quebec.....	15,942	14,404	30,346	20,882	18,316	39,198	24,333	21,384	45,717
Ontario.....	40,357	39,345	79,702	55,230	52,391	107,621	59,780	57,070	116,850
Manitoba.....	2,053	1,895	3,948	2,607	2,525	5,132	5,048	4,265	9,313
Saskatchewan.....	1,238	1,411	2,649	1,621	1,819	3,440	1,882	1,872	3,754
Alberta.....	3,975	4,074	8,049	5,123	4,955	10,078	7,685	7,319	15,004
British Columbia.....	9,269	9,233	18,502	12,452	12,294	24,746	13,715	13,500	27,215
Yukon and Northwest Territories.....	67	68	135	113	102	215	97	67	164
Canada.....	74,707	72,051	146,758	100,349	94,394	194,743	115,158	107,718	222,876

In like manner, immigrant arrivals are asked to record the occupations they intend to follow in Canada. Approximately 53.6 p.c. of the persons admitted in 1967 declared that they would enter the labour force. The other 46.4 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 27.9 p.c. were classed as managerial, professional and technical, 5.1 p.c. were clerical workers, 5.2 p.c. were in service occupations, 41.6 p.c. were in manufacturing, mechanical and construction trades, 9.5 p.c. were general labourers and 3.8 p.c. were farmers. About 17.4 p.c. of the female immigrants entering the labour force intended to follow service occupations. Details are given in Table 9.

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1966 and 1967

Intended Occupation	1966			1967		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Workers						
Managerial (owners, managers, officials).....	2,193	99	2,292	2,876	147	3,023
Professional and Technical.....	15,345	8,292	23,637	20,205	10,648	30,853
Professional Engineers—						
Civil.....	793	6	799	910	7	917
Mechanical.....	936	1	937	985	3	988
Industrial.....	137	—	137	111	1	112
Electrical.....	707	4	711	911	5	916
Mining.....	164	—	164	181	—	181
Chemical.....	285	12	297	369	18	387
Other.....	159	6	165	202	1	203
Physical Scientists—						
Chemists.....	496	70	566	661	90	751
Geologists.....	173	5	178	246	12	258
Physicists.....	149	7	156	162	21	183
Other.....	65	2	67	98	4	102
Biologists and Agricultural Professionals—						
Biological scientists.....	106	28	134	176	50	226
Veterinarians.....	43	2	45	59	8	67
Other.....	96	9	105	125	9	134
Teachers—						
Professors, principals.....	1,193	217	1,410	1,663	323	1,986
School teachers.....	1,443	2,022	3,465	2,319	3,069	5,388
Other instructors.....	86	131	217	159	166	325
Health Professionals—						
Physicians, surgeons.....	848	147	995	1,005	208	1,213
Dentists.....	61	17	78	79	20	99
Nurses, graduate.....	166	3,566	3,732	206	4,056	4,262
Nurses-in-training.....	8	41	49	22	67	89
Therapists.....	35	231	266	57	260	317
Optometrists.....	8	3	11	10	3	13
Osteopaths, chiropractors.....	1	1	2	10	3	13
Pharmacists.....	62	44	106	70	72	142
Medical and dental technicians.....	155	234	389	191	240	431
Other.....	8	17	25	6	16	22
Law Professionals.....	63	2	65	78	12	90
Religion Professionals.....	408	84	492	357	68	425
Artists, Writers and Musicians—						
Commercial artists.....	156	36	192	227	57	284
Art teachers.....	40	17	57	56	23	79
Authors, editors, journalists.....	246	45	291	303	73	376
Musicians, music teachers.....	89	26	115	141	30	171
Other Professionals—						
Architects.....	333	22	355	396	36	432
Draughtsmen.....	2,380	145	2,525	2,637	193	2,830
Surveyors.....	123	2	125	184	1	185
Actuaries, statisticians.....	55	10	65	66	12	78
Economists.....	119	20	139	202	22	224
Computer programmers.....	95	19	114	241	45	286

**9.—Intended Occupations of Male and Female Immigrants Admitted to Canada,
1966 and 1967—continued**

Intended Occupation	1966			1967		
	Males	Females	Total	Males	Females	Total
Workers—continued	No.	No.	No.	No.	No.	No.
Professional and Technical—concluded						
Other Professionals—concluded						
Accountants, auditors.....	587	78	665	782	51	833
Dietitians.....	1	64	65	2	74	76
Social workers.....	62	129	191	129	204	333
Librarians.....	45	114	159	80	159	239
Interior decorators.....	98	62	160	160	73	233
Photographers.....	174	26	200	248	18	266
Science technicians.....	1,437	434	1,871	2,366	588	2,954
Miscellaneous.....	451	134	585	557	177	734
Clerical.....	3,643	9,592	13,235	4,237	12,372	16,609
Bookkeepers, cashiers.....	677	1,109	1,786	946	1,619	2,565
Storekeepers, shipping clerks.....	554	106	660	694	130	824
Stenographers, typists.....	79	6,171	6,250	93	8,161	8,254
Other.....	2,333	2,206	4,539	2,504	2,462	4,966
Transportation.....	1,294	8	1,302	1,374	4	1,378
Aircraft operators.....	62	—	62	111	1	112
Railway operators.....	18	—	18	36	—	36
Water transport.....	268	1	269	364	2	366
Road transport.....	895	3	898	791	1	792
Other.....	51	4	55	72	—	72
Communication.....	148	359	507	207	309	516
Commercial.....	2,029	1,006	3,035	2,071	959	3,030
Auctioneers, canvassers.....	20	1	21	26	—	26
Pedlars, commercial travellers.....	179	2	181	153	3	156
Sales clerks, salesmen.....	1,809	989	2,798	1,865	932	2,797
Other.....	21	14	35	27	24	51
Financial.....	259	12	271	317	11	328
Service and Recreation.....	3,421	5,260	8,681	4,287	6,429	10,716
Protective service.....	406	8	414	465	7	472
Cooks.....	812	169	981	1,222	165	1,387
Domestic servants.....	39	2,750	2,789	50	2,792	2,842
Nurses' aides.....	85	518	603	130	949	1,079
Waiters, porters.....	1,052	710	1,762	1,244	586	1,830
Athletes, entertainers.....	150	60	210	174	67	241
Other.....	877	1,045	1,922	1,002	1,863	2,865
Farmers.....	3,046	107	3,153	3,134	69	3,203
Loggers and Related Workers.....	179	—	179	224	—	224
Fishermen, Hunters, Trappers.....	81	—	81	100	—	100
Miners, Well Drillers.....	334	—	334	380	—	380
Construction.....	9,523	12	9,535	10,637	6	10,643
Carpenters.....	2,464	3	2,467	2,699	1	2,700
Plumbers.....	789	—	789	1,006	1	1,007
Electricians.....	1,680	1	1,681	2,244	—	2,244
Painters, glaziers.....	863	5	868	926	3	929
Bricklayers, stonemasons.....	2,470	—	2,470	2,381	—	2,381
Cement and concrete workers.....	105	—	105	125	—	125
Plasterers, lathers.....	260	—	260	242	—	242
Sheet metal workers.....	650	2	652	771	1	772
Other (excl. labourers).....	242	1	243	243	—	243
Manufacturing and Mechanical.....	20,919	3,593	24,512	23,763	4,355	28,118
Food workers.....	1,435	43	1,478	1,647	51	1,698
Rubber workers.....	71	—	71	50	—	50
Leather workers.....	353	31	384	332	46	378
Textile workers.....	278	211	489	305	233	538
Tailors, furriers.....	947	2,844	3,791	1,103	3,571	4,674
Woodworkers, sawyers.....	1,232	10	1,242	1,294	4	1,298
Paper and chemical workers.....	148	9	157	145	5	150
Printers, bookbinders.....	668	80	748	760	72	832
Furnacemen, moulders.....	518	1	519	403	5	408

**9.—Intended Occupations of Male and Female Immigrants Admitted to Canada,
1966 and 1967—concluded**

Intended Occupation	1966			1967		
	Males	Females	Total	Males	Females	Total
Workers—concluded	No.	No.	No.	No.	No.	No.
Manufacturing and Mechanical—concluded						
Jewellers, watchmakers.....	197	7	204	232	17	249
Machinists.....	7,961	84	8,045	8,865	89	8,954
Mechanics, repairmen.....	3,657	7	3,664	4,749	5	4,754
Electrical, electronic workers.....	1,688	106	1,794	2,124	76	2,200
Painters (excl. construction).....	399	1	400	362	1	363
Clay, glass, stone workers.....	195	20	215	171	17	188
Stationary enginemen.....	541	1	542	525	—	525
Freight handlers.....	71	—	71	59	1	60
Other.....	560	138	698	637	162	799
Labourers.....	6,708	885	7,593	7,839	953	8,792
Not Stated.....	616	247	863	1,029	597	1,626
Totals, Workers.....	69,738	29,472	99,210	82,680	36,859	119,539
Non-workers						
Wives.....	—	34,216	34,216	—	37,894	37,894
Children.....	27,775	26,120	53,895	29,067	27,350	56,417
Other.....	2,837	4,585	7,422	3,411	5,615	9,026
Totals, Non-workers.....	30,612	64,921	95,533	32,478	70,859	103,337
Totals, Immigrants.....	100,350	94,393	194,743	115,158	107,718	222,876

Deportations.—Deportations by cause and nationality are shown in Table 10 for the years 1965-67. Persons who have not yet acquired domicile (five years of residence in Canada as landed immigrants) may be deported if they fall into prohibited classes at time of admission or within five years of admission, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons, or have gained admission by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

10.—Deportations,¹ by Cause and Nationality, 1965-67

NOTE.—Figures from 1903 are given in the corresponding table of previous Year Books.

Cause and Nationality	1965	1966	1967
Cause	No.	No.	No.
Mental and physical.....	39	62	80
Public charges.....	6	11	12
Criminality.....	189	257	419
Misrepresentation ² and stealth.....	502	593	600
Other causes.....	105	96	267
Totals, Deportations.....	841	1,019	1,378
Nationality			
British.....	80	97	118
United States.....	222	318	471
Other.....	539	604	789

¹ Excludes rejections and persons refused admission.

² Includes deserting seamen deported.

Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 11 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1958-67 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 23,442 Canadian-born persons entering the United States in the year ended June 30, 1967 with the intention of remaining permanently, 10,617 were males and 12,825 females. Slightly more than one fifth, or 4,941, of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 23,442 native-born persons was the professional or technical group which numbered 3,401; craftsmen or foremen numbered 1,091, and clerical and kindred workers 994. On the other hand, 15,193 persons, or 64.8 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 46.8 p.c. of the total were persons under 20 years of age.

Of the 34,768 persons entering the United States from Canada claiming Canada as country of last permanent residence—which of course includes native-born persons and those born in other countries who have resided in Canada—the Immigration and Naturalization Service of the United States Department of Justice lists 5,965 as professional, technical and kindred workers, 2,497 as craftsmen, foremen and kindred workers and 1,578 as clerical and kindred workers. Housewives, children and others with no reported occupation accounted for 19,903 or 57.2 p.c. of the total.

11.—Canadian-Born Persons Entering the United States from Canada and Elsewhere, and All Persons Entering the United States from Canada, Years Ended June 30, 1958-67

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above). SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere	Year	Entering U.S. from Canada		Canadian-Born Entering U.S. from Elsewhere
	Canadian-Born	All Persons			Canadian-Born	All Persons	
	No.	No.	No.		No.	No.	No.
1958.....	29,245	45,143	810	1963.....	35,320	50,509	683
1959.....	22,325	34,599	757	1964.....	37,351	51,114	723
1960.....	30,312	46,668	678	1965.....	37,519	50,035	808
1961.....	31,312	47,470	726	1966.....	27,707	37,273	651
1962.....	20,569	44,272	808	1967.....	22,729	34,768	713

PART II.—CANADIAN CITIZENSHIP

Section 1.—The Canadian Citizenship Act

On Jan. 1, 1947, the Canadian Citizenship Act came into effect replacing previous Naturalization Acts in force in Canada. The Citizenship Act created the distinct nationality of a "Canadian citizen" to be recognized throughout the world and it provided a means whereby those non-Canadian British subjects and aliens who were permanently residing in Canada or those who might subsequently immigrate to Canada could apply for the grant of Canadian citizenship. The Citizenship Act provides that all Canadian citizens are recognized as British subjects or Commonwealth citizens, but the reverse is not necessarily true.

The administration of Canadian citizenship was the responsibility of the Department of Citizenship and Immigration from Jan. 18, 1950 to Oct. 1, 1966 when, as a result of the proclamation of the Government Organization Act (SC 1966, c. 25), it was transferred to the Department of the Secretary of State. Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155. Over the years the Citizenship Act has undergone several amendments, the latest on July 7, 1967. The provisions of the Act, including the 1967 amendments, are outlined briefly in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.—The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 1947. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on Jan. 1, 1947; and (2) those born of Canadian fathers outside of Canada who were not aliens on Jan. 1, 1947 and were either minors on that date or had already entered Canada for permanent residence.

The Act provides that a person born abroad who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.—A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada upon that date.

Newfoundland and Canadian Citizenship.—On Apr. 1, 1949, Newfoundland became the tenth province of Canada and every person born therein or naturalized or every British subject who had domicile in Newfoundland on that date or every woman who married a citizen of Newfoundland and took up residence there before Apr. 1, 1949 became a Canadian citizen. They acquired the right of conferring Canadian citizenship by descent to their children born outside of Newfoundland in the same manner as those who had previously become Canadians. Persons born outside of Newfoundland to Newfoundland parents are natural-born Canadian citizens provided they were either minors on Apr. 1, 1949 or had before that date been lawfully admitted to Canada or Newfoundland for permanent residence. However, a person who was a minor on Apr. 1, 1949, ceased to be a Canadian on his 24th birthday or on July 1, 1968, whichever is the later date, unless

he has his place of domicile in Canada at such date or has before such date, and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship. A person born outside of Canada to Newfoundland parents after Mar. 31, 1949 is a natural-born Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases. A person who becomes a natural-born Canadian in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada on that date.

Canadian Citizens other than Natural-Born.—Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

Acquisition of Canadian Citizenship by Aliens or British Subjects.—An adult non-Canadian British subject or an alien who wishes to become a Canadian must formally file an application for citizenship. The non-Canadian British subject may file an application direct with the Registrar of Canadian Citizenship, whereas an alien must file an application through his local court, or through one of the special citizenship courts now established or, if he lives more than 50 miles from a court, he may mail his application to the Registrar of Canadian Citizenship in Ottawa, who will file it with the appropriate court. After the application has been 'posted' for three months, he shall appear before the court for examination. In either case the same requirements are generally applicable:—

- (1) He must have resided in Canada for 12 of the 18 months immediately preceding the date of his application.
- (2) He must have been lawfully admitted to Canada for permanent residence and either have acquired Canadian domicile before July 7, 1967, or have resided in Canada for five of the eight years immediately preceding the filing of his application. Persons living in Canada before obtaining "landed immigrant" status may count half of each full year before landing toward the residence qualification. The wife of a Canadian needs only to be admitted for permanent residence and reside in Canada for one year.
- (3) He must be of good character and not under an order of deportation.
- (4) He must have an adequate knowledge of either English or French or, alternatively, he is the spouse, widow or widower of a Canadian or, either he was 40 or more years of age at the time of lawful admission and has resided in Canada for more than 10 years or he was less than 40 at the time of admission and has resided continuously in Canada for more than 20 years.
- (5) He must have an adequate knowledge of the responsibilities and privileges of citizenship.
- (6) He must intend to comply with the Oath of Allegiance and to have his place of domicile permanently in Canada.

At the conclusion of a court hearing, the decision of the court is forwarded to the Minister responsible for the administration of the Canadian Citizenship Act. If the decision is favourable and a certificate of Canadian Citizenship is granted by the Minister, it is forwarded to the clerk of the court who shall inform the applicant of the date and time he is to appear before the court to take the Oath of Allegiance, renounce his previous nationality and receive his certificate. Where a court finds that an applicant does not possess the required qualifications to be granted citizenship, the Minister, upon receipt of the decision, will so advise the applicant and give him notice that he may, within 30 days of receipt of such notice, appeal the decision to the Citizenship Appeal Court. The Citizenship Appeal Court consists of one or more designated judges of the Exchequer Court of

Canada. If a court rejects an application and this decision is upheld by the Citizenship Appeal Court or if an application is refused by the Minister, the applicant has the right to file a new application two years after the date of rejection.

Status of Married Women.—The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of Minor Children.—Alien and British subject minor children do not automatically become Canadians with their parents. After one parent has become a Canadian, the responsible parent of that child, his mother if she has de facto custody of the child or maintains him, the tutor or the legal guardian of the child may apply for citizenship on the child's behalf. Application is made to the Registrar of Canadian Citizenship, Ottawa. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances.

Loss of Canadian Citizenship.—Canadian citizenship may be lost in the following manner:—

- (1) A Canadian citizen who when outside of Canada and not under disability acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.
- (2) A natural-born Canadian citizen who is a dual national by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen through the making of a declaration of renunciation thereof.
- (3) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.

Prior to the 1967 amendments of the Citizenship Act, a person, other than a natural-born Canadian, who since becoming a Canadian had resided outside of Canada for 10 consecutive years automatically ceased to be a Canadian; this provision for automatic loss has been removed from the Citizenship Act.

Loss of Citizenship by Revocation—Applicable Both to Non-natural-Born and to Natural-Born Canadians.—Prior to the 1967 amendments of the Citizenship Act, loss of Canadian citizenship by revocation was limited under certain provisions of the Act only to non-natural-born Canadians. This discriminatory distinction between non-natural-born and natural-born Canadians has been removed from the Citizenship Act and the following substituted: Canadian citizenship may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that *any Canadian citizen* has, when not under a disability, (1) acquired voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage); (2) taken or made an oath, affirmation or other declaration of allegiance to a foreign country; (3) made a declaration renouncing his Canadian citizenship; or (4) obtained Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Citizenship.—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the commission referred to in the Citizenship Act for a ruling and the decision of the commission or the court, as the case may be, shall be final.

Section 2.—Canadian Citizenship Statistics

According to the 1961 Census, which required that each person state the country to which he owed allegiance and had citizenship rights as at June 1, 1961, less than 6 p.c. of Canada's population reported a country of citizenship other than Canada. Table 1 shows the citizenship of the population by province.

1.—Citizenship of the Population, by Province, Census 1961

Province or Territory	Canadian	Other Common- wealth	United States	European Countries	Asiatic	Other	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	455,282	1,186	499	763	95	28	457,853
Prince Edward Island.....	103,618	337	283	364	16	11	104,629
Nova Scotia.....	725,686	4,568	2,254	4,122	237	140	737,007
New Brunswick.....	590,662	2,003	2,573	2,443	112	143	597,936
Quebec.....	5,078,082	31,491	16,585	121,278	4,608	7,167	5,259,211
Ontario.....	5,673,098	184,429	36,329	317,216	7,309	17,711	6,236,092
Manitoba.....	879,187	10,059	3,242	26,347	688	2,163	921,686
Saskatchewan.....	902,106	5,946	3,656	11,664	969	840	925,181
Alberta.....	1,240,895	21,353	11,674	53,129	1,982	2,911	1,331,944
British Columbia.....	1,498,498	44,647	10,908	64,641	6,973	3,415	1,629,082
Yukon and Northwest Territories.....	35,315	671	309	1,228	44	59	37,626
Canada.....	17,182,429	306,690	88,312	603,195	23,033	34,588	18,238,247

Citizenship Certificates Issued and Granted.—Citizenship certificates "issued", as shown in Table 2, include both certificates granted to new citizens and those issued for various reasons to persons who were already Canadian citizens; certificates "granted" means that the holders became Canadian citizens by the grant of such certificates.

2.—Citizenship Certificates Issued and Granted, by Status of Recipient, 1966 and 1967

Certificates	1966	1967	Certificates	1966	1967
	No.	No.		No.	No.
Issued—			Granted to—concluded		
To Canadians by—			Alien.....	48,155	45,381
Birth.....	2,465	5,238	Adults.....	36,354	36,182
Naturalization.....	1,608	1,769	Minors.....	11,001	9,403
Marriage.....	345	425	Adopted or legitimated.....	405	369
Domicile.....	1,535	2,063	Re-acquisition of status.....	395	427
To remove doubt.....	16	9	Totals, Granted.....	60,847	59,968
Resumption.....	298	212	Totals, Issued and Granted.....	120,071	121,827
Replacements.....	3,747	3,219			
Miniatures.....	49,210	48,924			
Totals, Issued.....	59,224	61,859			
Granted to—			Miscellaneous—		
British.....	12,692	14,587	Retention.....	278	265
Adults.....	9,893	11,610	Registration of births abroad.....	6,644	6,115
Minors.....	2,644	2,830	Extension.....	208	158
Adopted or legitimated.....	165	147	Loss by alienation ¹	596	855 ²

¹ Represents only those cases reported to the Citizenship Branch by posts abroad.

² Two by revocation.

Characteristics of Persons Granted Citizenship Certificates in 1967.—Since 1953 comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality. The number of applicants fluctuates from year to year but it is known that about 40 p.c. of the immigrants who entered Canada during the past ten years who are eligible for Canadian citizenship have become Canadians.

Of the 59,968 persons granted citizenship in 1967, fewer than 1 p.c. had immigrated to Canada before 1921, 2 p.c. in the period 1921-40, 6 p.c. in the period 1941-50 and 91 p.c. after 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 18 p.c. in Quebec, 52 p.c. in Ontario, 15 p.c. in the Prairie Provinces and 13 p.c. in British Columbia. Almost 87 p.c. of them resided in urban centres.

About 21 p.c. of the persons naturalized in 1966 previously owed allegiance to a Commonwealth country, 15 p.c. were former citizens of Italy, 13 p.c. of Germany, 9 p.c. of the Netherlands, 5 p.c. of Greece, 4 p.c. of Yugoslavia and 3 p.c. of Hungary. Most of the persons designated as "stateless" were born in Poland, the Soviet Union, Yugoslavia, Hungary, Germany, Czechoslovakia or Romania.

Among the males in the labour force naturalized in 1967, craftsmen, production process and related workers occupations were reported by 45 p.c., 10 p.c. were in service and recreation occupations, 15 p.c. were in professional and technical occupations, labourers accounted for 7 p.c., managerial occupations for 6 p.c. and clerical workers, salesmen, farmers, and farm workers for 4 p.c. each. Of the females, 48 p.c. were homemakers and, among those employed outside the home, 28 p.c. were in the craftsmen, production process and related workers occupations group, 22 p.c. were in service and recreation occupations and 27 p.c. were in clerical occupations.

3.—Persons Granted Citizenship Certificates in 1966 and 1967, by Province of Residence, and Period of Immigration to Canada

Year and Residence	Period of Immigration						Born in Canada ¹	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1960	1961-1966		
	No.	No.	No.	No.	No.	No.		
1966								
Residing in Canada	395	781	230	3,913	46,482	8,795	159	60,753
Newfoundland.....	1	—	3	8	68	14	—	94
Prince Edward Island.....	—	2	—	7	37	2	—	48
Nova Scotia.....	2	11	4	58	470	79	2	626
New Brunswick.....	—	1	—	31	209	66	2	309
Quebec.....	55	94	32	415	8,098	2,102	26	10,822
Ontario.....	98	295	92	2,130	25,235	4,670	53	32,573
Manitoba.....	42	73	24	194	1,904	254	15	2,506
Saskatchewan.....	30	64	17	119	723	150	14	1,117
Alberta.....	64	135	36	360	3,868	502	22	4,987
British Columbia.....	102	105	22	583	5,772	947	25	7,556
Yukon and N.W.T.....	1	1	—	8	98	12	—	120
Residing Outside Canada	1	—	—	12	46	26	9	94
Totals, Naturalized	396	781	230	3,925	46,528	8,824	168	60,852
	Period of Immigration						Born in Canada ¹	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1960	1961-1967		
	No.	No.	No.	No.	No.	No.		
1967								
Residing in Canada	318	696	256	3,715	40,583	14,059	194	59,821
Newfoundland.....	1	—	—	1	43	44	—	89
Prince Edward Island.....	—	1	1	1	37	8	—	48
Nova Scotia.....	4	3	4	63	407	129	3	613
New Brunswick.....	3	2	2	29	167	81	1	285
Quebec.....	33	71	28	307	6,138	3,927	17	10,521
Ontario.....	77	275	96	2,041	21,819	6,871	57	31,236
Manitoba.....	22	53	23	215	1,752	480	20	2,565
Saskatchewan.....	20	94	26	95	773	282	21	1,322
Alberta.....	69	113	41	426	3,859	792	45	5,345
British Columbia.....	77	83	35	530	5,524	1,414	30	7,693
Yukon and N.W.T.....	1	1	—	7	64	31	—	104
Residing Outside Canada	—	2	1	7	83	35	19	147
Totals, Naturalized	318	698	257	3,722	40,666	14,094	213	59,968

¹ Canadian-born persons who lost their citizenship by marriage; this applies to females only.

4.—Persons Granted Citizenship Certificates in 1966 and 1967, by Age Group, Occupation and Sex

Age Group and Occupation	1966			1967		
	Males	Females	Total	Males	Females	Total
Age Group	No.	No.	No.	No.	No.	No.
0-14 years.....	3,483	3,266	6,749	2,991	2,679	5,670
15-19 ".....	3,447	3,192	6,639	3,124	2,869	5,993
20-29 ".....	6,941	6,303	13,244	6,195	6,295	12,490
30-39 ".....	8,931	7,643	16,574	8,794	8,243	17,037
40-49 ".....	5,204	4,633	9,837	5,738	5,249	10,987
50-59 ".....	2,378	2,398	4,776	2,359	2,424	4,783
60-69 ".....	1,139	1,296	2,435	1,069	1,359	2,428
70+ ".....	310	288	598	249	331	580
Totals.....	31,833	29,019	60,852	30,519	29,449	59,968
Occupation						
Managerial.....	1,476	181	1,657	1,531	217	1,748
Professional and technical.....	3,131	1,168	4,299	3,624	1,433	5,057
Clerical.....	980	2,334	3,314	995	2,731	3,726
Transport and communication.....	707	83	790	710	68	778
Sales.....	737	312	1,049	877	430	1,307
Service and recreation.....	2,770	2,286	5,056	2,468	2,196	4,664
Farmers and farm workers.....	938	38	976	936	28	964
Fishermen, trappers and loggers.....	179	2	181	125	—	125
Miners, quarrymen and related workers.....	244	—	244	205	1	206
Craftsmen, production process and related workers.....	11,100	2,924	14,024	10,563	2,840	13,403
Labourers, n.e.s.....	1,846	8	1,854	1,561	22	1,583
Homemakers.....	—	13,513	13,513	—	14,064	14,064
No occupation (including students, retired, etc.).....	3,893	2,736	6,629	3,846	2,761	6,607
Children under 14 years of age.....	2,931	2,721	5,652	2,529	2,238	4,767
Not stated ¹	901	713	1,614	549	420	969

¹ Mainly children over 14 years of age.

5.—Persons Granted Citizenship Certificates in 1966 and 1967, by Country of Birth

Country of Birth	1966	1967	Country of Birth	1966	1967
	No.	No.		No.	No.
Algeria.....	53	61	Morocco.....	162	174
Argentina.....	66	57	Netherlands.....	5,529	5,321
Australia.....	135	131	Norway.....	200	187
Austria.....	925	859	Poland.....	3,353	3,062
Belgium.....	784	575	Portugal.....	1,440	1,305
Britain.....	8,646	10,471	Romania.....	664	571
Canada.....	300	343	South Africa.....	224	175
China.....	1,631	1,879	Spain.....	260	212
Czechoslovakia.....	410	356	Sweden.....	138	113
Denmark.....	804	800	Switzerland.....	303	337
Egypt.....	138	868	Turkey.....	175	189
Finland.....	703	745	Union of Soviet Socialist Republics ¹	1,757	1,397
France.....	997	887	United States.....	1,080	1,158
Germany.....	6,851	6,928	West Indies.....	741	798
Greece.....	2,943	2,998	Yugoslavia.....	3,057	2,421
Guyana.....	166	202	Other.....	1,122	1,054
Hong Kong.....	281	239			
Hungary.....	2,597	1,945	Totals, All Countries.....	60,852	59,968
India.....	654	617			
Indonesia.....	104	75	Commonwealth.....	11,552	13,502
Ireland, Republic of.....	666	665	Other Asia.....	2,723	2,857
Israel.....	253	161	Other Europe.....	44,393	40,693
Italy.....	9,916	8,949	South America.....	341	270
Japan.....	96	109	United States.....	1,080	1,153
Lebanon.....	261	213	Other.....	763	1,488
Malta.....	267	361			

¹ Includes Baltic countries.

6.—Persons Granted Citizenship Certificates in 1966 and 1967, by Country of Former Allegiance

Country of Former Allegiance	1966	1967	Country of Former Allegiance	1966	1967
	No.	No.		No.	No.
Commonwealth countries.....	12,697	14,586	Lebanon.....	290	251
Austria.....	857	812	Lithuania.....	152	101
Belgium.....	704	545	Netherlands.....	5,700	5,426
Bulgaria.....	29	20	Norway.....	205	192
China.....	1,622	1,867	Poland.....	2,917	2,650
Czechoslovakia.....	245	215	Portugal.....	1,452	1,299
Denmark.....	815	810	Romania.....	330	348
Estonia.....	182	154	Spain.....	261	201
Finland.....	706	747	Sweden.....	113	115
France.....	1,106	952	Switzerland.....	309	340
Germany.....	7,845	7,871	Turkey.....	127	91
Greece.....	2,985	3,095	Union of Soviet Socialist Republics....	988	710
Hungary.....	2,431	1,822	United States.....	1,239	1,317
Israel.....	792	481	Yugoslavia.....	2,884	2,253
Italy.....	10,048	9,036	Other.....	599	1,420
Japan.....	88	101			
Latvia.....	129	140	Totals, All Countries.....	60,852	59,968



In a wilderness setting near Atikokan in north-western Ontario, Quetico Centre began life a dozen years ago in an abandoned ranger station through the efforts of community interests. Now, as a residential centre for people with common objectives of learning, it performs a unique adult educational function. Isolated from outside distractions, they explore new thoughts, test established ideas and discover fresh patterns of learning.



An art instructor explains techniques to a group of Indians who are training to be heavy equipment operators.

CHAPTER V.—VITAL STATISTICS*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Vital statistics provide a key to the interpretation of population development—a measure of the pace at which the population is growing, the rate at which women are marrying and reproducing, and the effect this has on the age and sex distribution of the population, as well as the relative importance of the diseases that cause death each year. Vital statistics constitute the record of births, deaths, marriages and divorces registered in the provinces and territories of Canada. The continuity of such data gives a constant guide to the planning, operation and evaluation of many national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution. The population data upon which vital statistics rates are computed are given in Chapter III of this volume. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202), *Causes of Death* (Catalogue No. 84-203) and in other regular and special reports; in addition, certain unpublished data are available on request.

This Chapter includes the most recent data available at the time of going to press; certain tables therefore include 1967 data while others are up-dated to 1966 only.

* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

Section 1.—Summary of Vital Statistics

Table 1 gives a summary for reference purposes of the principal vital statistics of the provinces and territories of Canada for five-year periods 1941-65 and for single years 1965-67. Table 2 shows similar data for urban centres having at least 20,000 population at the date of the 1966 Census for the year 1966 with comparative averages for 1961-65.

1.—Summary of Principal Vital Statistics, by Province, 1941-67

NOTE.—Figures from 1921, when the collection of national statistics was initiated, are given in previous editions of the Year Book. Figures for neonatal mortality (within the first four weeks of birth) are given on p. 251 and those for divorces on p. 260.

Province and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ³	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁵	No.	Rate ³
Newfoundland—												
Av. 1941-45.....	9,292	29.8	3,681	11.8	5,611	18.0	852	91.7	39	41.8	2,967	9.5
" 1946-50.....	12,352	36.2	3,179	9.3	9,173	26.9	754	61.1	25	19.9	2,711	8.0
" 1951-55.....	13,101	34.1	2,926	7.6	10,175	26.5	598	45.6	24	18.3	2,836	7.4
" 1956-60.....	14,934	34.6	3,114	7.2	11,820	27.4	585	39.2	17	11.4	3,032	7.0
" 1961-65 ⁶	15,104	31.8	3,142	6.6	11,962	25.2	538	35.6	7	4.5	3,331	7.0
1965 ⁷	14,740	30.2	3,230	6.6	11,510	23.6	459	31.1	5	3.4	3,412	7.0
1966.....	14,084	28.5	3,072	6.2	11,012	22.3	395	28.0	2	1.4	3,728	7.6
1967.....	12,844	25.7	3,117	6.2	9,727	19.5	367	28.6	3	2.3	4,021	8.0
P.E. Island—												
Av. 1941-45.....	2,180	23.7	964	10.5	1,216	13.2	114	52.4	9	39.4	686	7.5
" 1946-50.....	2,869	30.5	922	9.8	1,947	20.7	114	39.7	4	13.2	677	7.2
" 1951-55.....	2,720	27.2	923	9.2	1,797	18.0	88	32.4	2	8.1	623	6.2
" 1956-60.....	2,674	26.6	953	9.5	1,721	17.1	87	32.7	1	3.0	645	6.4
" 1961-65 ⁶	2,767	25.7	1,006	9.3	1,761	16.4	78	28.1	1	2.9	672	6.2
1965 ⁷	2,517	23.1	1,036	9.5	1,481	13.6	74	29.4	—	—	713	6.5
1966.....	2,199	20.3	1,048	9.7	1,151	10.6	57	25.9	2	9.1	752	6.9
1967.....	2,047	18.8	1,038	9.5	1,009	9.3	48	23.4	—	—	802	7.4
Nova Scotia—												
Av. 1941-45.....	15,146	25.2	6,326	10.5	8,820	14.7	870	57.5	41	26.9	6,302	10.5
" 1946-50.....	17,994	28.9	6,042	9.7	11,952	19.2	760	42.2	22	12.0	5,525	8.9
" 1951-55.....	18,246	27.5	5,802	8.8	12,444	18.7	586	32.1	13	6.9	5,283	8.0
" 1956-60.....	19,097	26.9	6,062	8.5	13,035	18.4	559	29.3	9	4.7	5,289	7.4
" 1961-65 ⁶	18,526	24.7	6,312	8.4	12,214	16.3	505	27.2	7	3.6	5,313	7.1
1965 ⁷	16,524	21.9	6,334	8.4	10,190	13.5	394	23.8	9	5.4	5,549	7.3
1966.....	15,220	20.1	6,478	8.6	8,742	11.5	384	25.2	2	1.3	5,833	7.7
1967.....	14,312	18.9	6,638	8.8	7,674	10.1	326	22.8	3	2.1	6,189	8.2
New Brunswick—												
Av. 1941-45.....	13,037	28.2	5,050	10.9	7,987	17.3	960	73.7	42	32.1	4,433	9.6
" 1946-50.....	16,878	34.0	4,886	9.8	11,992	24.2	1,015	60.1	23	13.6	4,864	9.8
" 1951-55.....	16,496	31.0	4,576	8.6	11,920	22.4	717	43.5	16	9.5	4,306	8.1
" 1956-60.....	16,567	29.0	4,640	8.1	11,927	20.9	567	34.2	8	4.6	4,357	7.6
" 1961-65 ⁶	15,668	25.8	4,749	7.8	10,919	18.0	419	26.7	7	4.6	4,531	7.5
1965 ⁷	14,175	23.0	4,710	7.7	9,465	15.3	326	23.0	5	3.5	4,766	7.7
1966.....	12,722	20.6	4,771	7.7	7,951	12.9	306	24.1	4	3.1	5,165	8.4
1967.....	12,353	19.9	4,894	7.9	7,459	12.0	310	25.1	3	2.4	5,452	8.8
Quebec—												
Av. 1941-45.....	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68.3	318	32.5	33,126	9.6
" 1946-50.....	115,496	30.4	33,723	8.9	81,773	21.5	6,205	53.7	227	19.7	34,874	9.2
" 1951-55.....	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44.1	149	11.6	35,584	8.3
" 1956-60.....	139,844	28.6	35,714	7.3	104,130	21.3	5,000	35.8	105	7.5	36,798	7.5
" 1961-65 ⁶	131,453	24.0	37,698	6.9	93,755	17.1	3,874	29.5	62	4.7	38,126	7.0
1965 ⁷	120,607	21.2	38,534	6.8	82,073	14.4	3,160	26.2	42	3.5	40,893	7.2
1966.....	109,873	19.0	38,680	6.7	71,198	12.3	2,776	25.3	58	5.3	44,411	7.7
1967.....	101,471	17.3	38,665	6.6	62,806	10.7	2,347	23.1	33	3.3	46,275	7.9
Ontario—												
Av. 1941-45.....	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42.1	197	25.3	38,042	9.7
" 1946-50.....	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36.1	129	12.3	44,084	10.3
" 1951-55.....	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28.2	83	6.5	45,213	9.1
" 1956-60.....	152,688	26.4	49,431	8.5	103,257	17.9	3,741	24.5	65	4.2	46,482	8.0
" 1961-65 ⁶	152,629	23.5	52,664	8.1	99,965	15.4	3,388	22.2	51	3.3	46,794	7.2
1965 ⁷	141,610	20.9	54,346	8.0	87,264	12.9	2,907	20.5	44	3.1	51,274	7.6
1966.....	131,942	19.0	54,171	7.8	77,771	11.2	2,669	20.2	36	2.7	54,571	7.8
1967.....	127,509	17.8	54,878	7.7	72,631	10.1	2,515	19.7	29	2.3	58,377	8.2

For footnotes, see end of table.

1.—Summary of Principal Vital Statistics, by Province, 1941-67—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ³	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁵	No.	Rate ⁵
Manitoba—												
Av. 1941-45.....	15,831	21.8	6,633	9.1	9,198	12.7	814	51.4	41	26.0	7,295	10.0
" 1946-50.....	19,325	25.9	6,702	9.0	12,623	16.9	810	41.9	24	12.6	7,605	10.2
" 1951-55.....	21,321	26.4	6,775	8.4	14,546	18.0	675	31.7	15	7.0	7,104	8.8
" 1956-60.....	22,408	25.6	7,293	8.3	15,115	17.3	671	30.0	10	4.6	6,600	7.5
" 1961-65.....	22,137	23.4	7,637	8.1	14,500	15.3	553	25.0	8	3.6	6,674	7.1
1965.....	19,976	20.7	7,716	8.0	12,260	12.7	460	23.0	6	3.0	7,012	7.3
1966.....	18,007	18.7	7,938	8.2	10,069	10.5	383	21.3	2	1.1	7,312	7.6
1967.....	17,180	17.8	7,629	7.9	9,551	9.9	371	21.6	3	1.7	7,942	8.2
Saskatchewan—												
Av. 1941-45.....	18,444	21.7	6,437	7.6	12,007	14.1	858	46.5	52	28.1	6,541	7.7
" 1946-50.....	21,907	26.3	6,473	7.8	15,434	18.5	883	40.3	29	13.1	7,413	8.9
" 1951-55.....	23,554	27.5	6,547	7.6	17,007	19.9	743	31.5	16	6.9	6,876	8.0
" 1956-60.....	24,046	26.9	6,753	7.5	17,293	19.4	654	26.3	9	3.8	6,395	7.1
" 1961-65.....	22,811	24.4	7,268	7.8	15,543	16.6	591	25.9	6	2.8	6,316	6.7
1965.....	20,494	21.6	7,437	7.8	13,057	13.8	503	24.5	9	4.4	6,806	7.2
1966.....	19,037	19.9	7,427	7.8	11,610	12.1	461	24.2	9	4.7	6,987	7.3
1967.....	17,993	18.3	7,441	7.8	10,552	11.0	465	25.8	4	2.2	7,579	7.9
Alberta—												
Av. 1941-45.....	18,845	23.7	6,355	8.0	12,490	15.7	827	43.9	46	24.2	7,977	10.0
" 1946-50.....	24,290	28.4	6,814	8.0	17,476	20.4	889	36.6	25	10.5	9,090	10.6
" 1951-55.....	31,087	30.6	7,527	7.4	23,560	23.2	894	28.7	15	5.0	9,750	9.6
" 1956-60.....	36,920	30.6	8,329	6.9	28,591	23.7	940	25.5	13	3.5	10,230	8.5
" 1961-65.....	37,004	26.5	9,317	6.7	27,687	19.8	917	24.8	10	2.6	10,581	7.6
1965.....	32,664	22.5	9,534	6.6	23,130	15.9	785	24.0	4	1.2	11,209	7.7
1966.....	30,562	20.9	9,677	6.6	20,915	14.3	640	20.9	6	1.9	11,879	8.1
1967.....	30,691	20.6	9,523	6.4	21,168	14.2	615	20.0	5	1.6	12,903	8.7
British Columbia—												
Av. 1941-45.....	17,705	19.8	9,368	10.5	8,337	9.3	684	38.6	46	26.2	9,535	10.7
" 1946-50.....	25,859	24.0	10,992	10.2	14,867	13.9	868	33.6	31	11.9	11,564	10.7
" 1951-55.....	31,347	25.1	12,233	9.8	19,114	15.3	856	27.3	17	5.4	11,131	8.9
" 1956-60.....	38,930	25.7	13,980	9.2	24,950	16.5	1,011	26.0	16	4.1	11,955	7.9
" 1961-65.....	36,753	21.5	15,236	8.9	21,517	12.6	843	22.9	10	2.7	11,927	7.0
1965.....	33,669	18.7	15,784	8.8	17,885	9.9	697	20.7	10	3.0	13,639	7.6
1966.....	32,502	17.3	16,290	8.7	16,212	8.6	779	24.0	13	4.0	14,682	7.8
1967.....	32,899	16.9	16,170	8.3	16,729	8.6	703	21.4	5	1.5	16,026	8.2
Yukon Territory—												
Av. 1941-45.....	105	21.0	96	19.3	9	1.7	11	100.8	1	57.0	60	12.1
" 1946-50.....	254	31.7	91	11.4	163	20.3	16	63.0	--	15.8	73	9.1
" 1951-55.....	413	43.0	90	9.4	323	33.6	22	52.8	--	4.8	94	9.8
" 1956-60.....	505	39.4	91	7.1	414	32.3	22	43.6	--	4.0	109	8.5
" 1961-65.....	509	34.9	87	6.0	422	28.9	21	42.0	--	7.9	107	7.7
1965.....	428	30.6	100	7.1	328	23.5	21	49.1	--	--	108	7.3
1966.....	369	25.7	82	5.7	287	20.0	20	54.2	--	--	94	6.5
1967.....	385	25.7	73	4.9	312	20.8	9	23.4	--	--	133	8.9
Northwest Territories—												
Av. 1941-45.....	383	31.9	332	27.7	51	4.2	72	188.5	2	47.0	95	7.9
" 1946-50.....	626	39.1	372	23.2	254	15.9	87	138.7	3	54.3	139	8.7
" 1951-55.....	666	40.1	284	17.1	382	23.0	78	117.1	2	36.0	115	6.9
" 1956-60.....	943	46.7	310	15.3	633	31.4	135	143.2	3	29.7	155	7.7
" 1961-65.....	1,174	45.9	250	9.8	924	36.1	109	92.9	1	5.1	154	6.0
1965.....	1,191	44.1	198	7.3	993	36.8	76	63.8	1	8.4	138	5.1
1966.....	1,158	40.3	229	8.0	929	32.3	90	77.7	1	8.6	182	6.3
1967.....	1,210	41.7	217	7.5	993	34.2	75	62.0	--	--	180	6.2
Canada—⁶												
Av. 1941-45.....	277,320	23.5	115,572	9.8	161,748	13.7	15,176	54.7	793	29.0	114,091	9.7
" 1946-50.....	355,748	27.4	120,438	9.3	235,310	18.1	15,723	44.2	527	14.9	126,895	9.8
" 1951-55.....	416,334	28.0	126,666	8.5	289,668	19.5	14,552	35.0	353	8.5	128,915	8.7
" 1956-60.....	469,555	27.6	136,669	8.0	332,886	19.6	13,953	29.7	255	5.4	132,047	7.8
" 1961-65.....	456,534	24.1	145,368	7.7	311,166	16.4	11,836	25.9	169	3.7	134,524	7.1
1965.....	418,595	21.3	148,939	7.6	269,656	13.7	9,862	23.6	135	3.2	145,519	7.4
1966.....	387,710	19.4	149,863	7.5	237,847	11.9	8,960	23.1	135	3.5	155,596	7.8
1967.....	370,891	18.2	150,283	7.1	220,611	10.8	8,151	22.0	88	2.1	165,879	8.1

¹ Excess of births over deaths. ² Deaths under one year of age; deaths within the first four weeks of birth are given on p. 251. ³ Per 1,000 population. ⁴ Per 1,000 live births. ⁵ Per 10,000 live births.
⁶ Figures for Newfoundland are included from 1949.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,¹ 1966 with Average for 1961-65

Note.— Birth and death rates cannot be computed for the period 1961-65 since urban centre populations are not known for intercensal periods. Figures for certain urban places may not be comparable for the periods shown because of changes in area boundaries, particularly for those indicated by an asterisk (*). Urban centres are designated in this table by the following abbreviations: c.=city, t.=town, v.l.=village, s.m.=suburban municipality and d.m.=district municipality.

Province and Urban Centre	Live Births			Deaths			Infant Mortality ²			Neonatal Mortality ³			Marriages ⁴		
	Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966	
		No.	Rate ⁵		No.	Rate ⁵		No.	Rate ⁶		No.	Rate ⁶		No.	Rate ⁶
Newfoundland—															
Corner Brook, c.....	845	686	25.3	127	128	4.7	36.5	21	30.6	24.4	13	19.0	214	230	8.5
St. John's, c.....	1,966	1,827	22.9	542	575	7.2	22.4	41	22.4	15.4	27	14.8	736	793	9.9
Prince Edward Island—															
Charlottetown, c.....	417	311	16.9	232	257	13.9	36.9	13	41.8	23.0	10	32.2	157	197	10.7
Nova Scotia—															
Dartmouth, c.....	1,700	1,468	25.0	230	262	4.5	24.8	30	20.4	15.8	20	13.6	287	341	5.8
Glace Bay, t.....	568	507	21.6	218	228	9.7	36.9	10	19.7	25.4	8	15.8	162	200	8.5
Halifax, c.....	2,109	1,622	18.7	736	788	9.1	24.7	39	24.0	17.2	29	17.9	1,047	1,070	12.3
Sydney, c.....	841	726	22.2	297	286	9.0	25.4	21	26.9	13.9	13	17.9	265	274	8.4
New Brunswick—															
Fredericton, c.....	574	478	21.3	171	182	8.1	19.2	10	20.9	12.5	7	14.6	243	318	14.2
Moncton, c.....	1,045	828	18.1	313	311	6.8	19.9	11	13.3	12.6	5	6.0	367	396	8.6
Saint John, c.....	1,441	1,143	22.2	578	510	9.9	25.1	28	24.5	17.3	19	16.6	515	545	10.6
Quebec—															
Alma, c.....	615	452	20.4	89	110	5.0	31.5	12	26.5	25.0	8	17.7	156	197	8.9
Anjou, t.....	439	522	23.2	52	73	3.2	17.8	12	23.0	11.8	10	19.2	46	95	4.2
Cap de la Madeleine, c.....	640	543	18.4	159	154	5.2	29.6	12	22.1	20.9	9	16.6	215	260	8.8
Charlebourg, c.....	373	468	18.8	94	115	4.6	18.8	6	12.8	11.8	6	12.8	73	121	4.9
Chicoutimi, c.....	895	701	21.6	193	200	6.1	42.2	32	45.6	29.9	24	34.2	241	256	7.9
Côte St. Luc, c.....	307	322	15.7	78	171	8.3	15.6	10	31.1	9.1	7	21.7	12	28	1.4
Dorval, c.....	375	338	16.2	83	91	4.4	24.5	3	8.9	17.6	3	8.9	56	104	5.0
Drummondville, c.....	662	601	18.8	222	240	7.5	69.2	50	83.2	35.0	14	23.3	248	305	9.6
Grandy, c.....	879	748	21.8	214	200	5.8	28.7	16	21.4	21.6	15	20.1	279	279	8.1

SUMMARY OF VITAL STATISTICS

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Hull, c.	1,640	1,412	23.5	419	429	7.1	37.6	44	31.2	27.4	32	22.7	430	532	8.8
Jacques-Cartier, c.	1,269	1,164	22.2	213	220	4.4	24.0	26	22.3	17.6	17	14.6	333	533	6.3
Jonquière, c.	804	595	20.1	141	151	5.1	25.4	8	13.4	16.7	6	10.1	218	286	9.6
Lachine, c.	846	736	17.1	272	281	6.5	23.6	13	17.7	18.9	10	13.6	278	325	3.8
LaSalle, c.	1,062	1,224	25.3	210	285	5.9	23.9	34	27.8	17.1	23	18.8	128	183	3.8
Laval, c.	3,939	3,667	18.7	669	749	3.8	22.6	74	20.2	16.0	56	15.3	599	822	4.2
Longueuil, c.	639	536	20.9	225	188	7.3	19.1	17	31.7	13.5	41	20.5	185	252	9.8
Montréal, c.	26,371	22,704	18.6	10,491	10,491	8.6	23.8	555	24.4	17.5	401	17.7	10,323	11,643	9.8
Montreal North, c.	1,439	1,439	21.2	343	374	5.5	29.2	68	47.3	18.3	24	16.7	215	304	4.5
Mount Royal, t.	243	131	13.1	131	143	6.0	14.0	3	8.2	8.2	24	14.4	161	232	10.6
Outremont, c.	321	314	10.2	272	242	7.8	16.2	8	25.5	13.1	5	15.9	204	202	6.5
Pierrefonds, c.	593	635	22.7	51	77	2.8	12.7	7	11.0	7.6	6	9.4	22	58	2.1
Pointe aux Trembles, c.	581	538	18.0	204	198	6.6	25.1	16	29.7	18.9	12	22.3	111	158	5.3
Pointe Claire, c.	403	343	12.8	143	129	4.8	13.9	2	5.8	7.9	2	5.8	107	161	6.0
Quebec, c.	3,601	2,824	16.9	94	1,564	9.4	31.5	74	26.2	23.0	61	21.6	1,536	1,596	9.6
Rimouski, c.	458	365	18.0	99	106	5.2	24.0	4	11.0	16.2	2	5.5	129	189	9.3
St. Foy, c.	1,086	22.5	15.8	190	194	3.9	16.6	19	17.5	12.1	15	13.8	130	231	4.8
St. Hyacinthe, c.	481	377	15.9	284	290	12.4	31.2	19	18.6	17.1	7	18.6	222	265	11.1
St. Jean, c.	629	537	19.3	176	205	7.4	21.0	11	20.5	15.9	8	14.9	215	256	9.8
St. Jérôme, c.	581	581	21.9	169	215	8.1	31.1	14	24.1	23.9	8	13.8	252	261	9.2
St. Laurent, c.	1,059	989	16.6	272	366	6.2	18.9	18	14.8	12.3	14	14.2	287	387	6.5
St. Léonard, c.	316	608	24.0	45	66	2.6	23.0	9	14.8	18.2	6	13.2	23	33	1.3
St. Michel, c.	2,205	1,941	27.2	250	272	3.8	20.0	41	21.1	14.1	28	14.4	225	297	4.2
Sherbrooke, c.	647	445	14.5	191	210	6.8	32.7	14	31.5	22.2	13	29.2	241	292	9.5
Shawinigan, c.	1,812	1,599	21.1	580	577	7.6	29.0	30	18.8	22.2	23	14.4	573	638	8.4
Thetford Mines, c.	513	391	18.1	135	123	5.7	30.0	8	20.5	16.8	6	15.3	158	165	7.6
Trois-Rivières, c.	1,384	1,391	18.1	488	425	7.4	31.7	29	26.4	23.4	23	20.9	447	460	8.0
Trois-Rivières, c.	1,384	1,391	18.1	488	425	7.4	31.7	29	26.4	23.4	23	20.9	447	460	8.0
Valleyfield, c.	673	547	18.8	199	182	6.3	33.9	12	21.9	22.9	10	18.3	232	285	9.8
Verdun, c.	1,547	1,245	16.2	606	620	8.1	23.8	27	21.7	16.5	19	15.3	528	583	7.6
Victoriaville, t.	514	466	21.9	170	165	7.7	37.3	16	34.3	27.6	13	27.9	178	216	10.1
Westmount, c.	224	181	7.5	245	229	9.5	40.1	3	16.6	19.6	1	5.5	307	314	13.0

Ontario

Barrie, c.	552	450	18.7	194	180	7.5	23.2	6	13.3	18.5	5	11.1	208	241	10.0
Bellefleur, c.	744	565	17.2	269	253	7.7	19.9	6	10.6	15.6	4	7.1	272	322	9.8
Brampton, t.	717	830	22.9	136	171	4.7	21.2	16	19.3	16.2	11	13.3	174	263	7.3
Brantford, c.	1,191	1,103	18.4	560	589	9.8	20.1	17	15.4	15.8	13	11.8	480	521	8.7
Burlington, t.	1,297	1,297	19.7	274	310	4.7	18.3	17	13.9	13.1	14	10.8	246	296	4.5
Chatham, c.	793	652	20.1	285	314	9.7	23.4	18	27.6	16.6	14	21.5	293	320	9.9
Chatham, c.	793	652	20.1	285	314	9.7	23.4	18	27.6	16.6	14	21.5	293	320	9.9
Eastview, c. (now Vanier City)	1,103	869	19.0	343	355	7.8	28.6	21	24.8	20.5	17	19.6	356	381	8.3
Forest Hill, v.	974	764	31.5	137	122	5.0	23.1	22	28.2	18.3	17	22.3	176	171	7.0
Fort William, c.	255	265	11.5	176	205	8.9	14.9	18	22.6	13.3	5	18.9	9	3	0.1
Galt, c.	1,018	861	17.9	400	413	8.6	21.4	6	20.9	17.1	12	13.9	346	445	9.2
Guelph, c.	720	687	21.5	250	284	8.5	22.7	14	19.4	15.4	10	13.9	249	323	9.6
Hamilton, c.	1,010	945	18.4	364	364	7.1	23.8	25	26.5	18.0	18	19.0	352	430	8.4
Kingston, c.	6,467	5,907	19.8	2,545	2,545	8.5	19.6	101	17.1	14.8	66	11.2	2,351	2,805	9.4
Kitchener, c.	1,363	1,190	20.2	481	493	8.4	26.6	28	23.5	20.0	21	17.6	597	616	10.4
Leaside, t.	2,125	2,228	22.8	564	631	6.8	19.8	48	22.6	15.3	37	17.4	655	796	8.5
London, c.	316	333	15.7	170	139	6.5	13.9	8	9.5	9.5	58	16.0	76	80	3.8
Niagara Falls, c.	4,129	3,629	18.7	1,482	1,503	7.7	22.0	84	23.1	16.9	13	12.6	1,387	1,496	8.7
Niagara Falls, c.	1,151	1,033	18.2	441	440	7.7	22.2	17	16.5	18.2	13	12.6	416	496	8.7

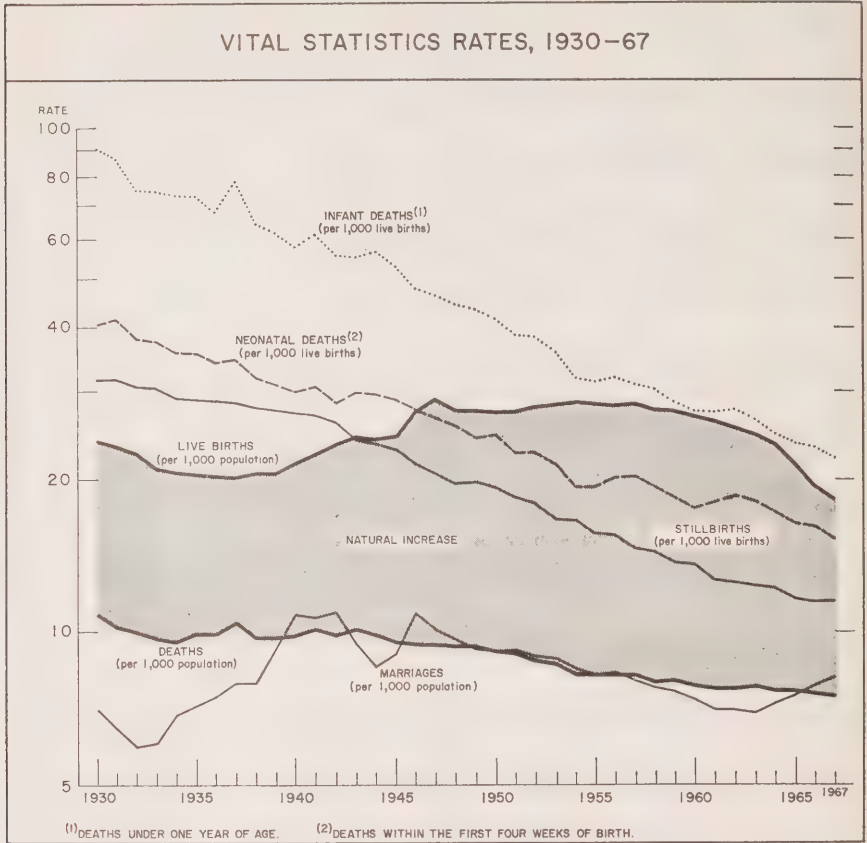
For footnotes, see end of table, p. 227.

2.—Summary of Principal Vital Statistics for Incorporated Urban Centres of 20,000 Population or Over,¹
1966 with Average for 1961-65—concluded

Provinces and Urban Centre	Live Births			Deaths			Infant Mortality ²			Neonatal Mortality ³			Marriages ⁴		
	Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966		Av. 1961-65	1966	
		No.	Rate ⁵		No.	Rate ⁵		No.	Rate ⁶		No.	Rate ⁶		No.	Rate ⁶
Ontario—concluded															
North Bay, c.....	641	414	17.5	208	254	10.7	18.1	9	21.7	13.1	7	16.9	254	248	10.5
*Oakville, c.....	905	965	18.3	186	184	3.5	21.0	13	18.7	16.4	15	15.5	223	367	7.0
Oshawa, c.....	1,769	1,733	22.2	459	408	6.0	23.1	35	20.2	18.5	27	15.6	545	610	7.3
Ottawa, c.....	6,034	4,961	17.1	2,271	2,436	8.4	25.7	116	23.4	18.9	85	17.1	2,209	2,474	8.5
Peterborough, c.....	1,035	949	16.9	442	486	8.7	19.3	21	22.1	15.8	15	15.8	384	497	8.8
Port Arthur, c.....	1,980	813	16.8	435	435	9.0	22.9	15	18.5	18.2	12	14.8	393	436	9.0
St. Catharines, c.....	1,910	1,811	18.7	696	748	7.7	19.1	43	23.7	14.9	37	20.4	666	807	8.3
St. Thomas, c.....	1,442	387	16.8	282	246	10.7	22.6	5	12.9	16.7	3	7.8	228	262	11.4
Sumner, c.....	1,220	1,025	18.5	358	380	7.0	20.6	26	25.4	15.9	20	19.5	373	451	8.3
*Sault Ste. Marie, c.....	1,439	1,596	21.4	385	505	6.8	20.0	31	19.4	15.6	22	13.8	488	556	7.5
Stratford, c.....	431	371	16.1	230	235	10.2	24.6	7	18.9	18.6	5	13.5	175	245	10.6
Sudbury, c.....	2,353	1,932	22.8	525	514	6.1	22.4	39	20.2	17.3	31	16.0	706	802	9.4
Thames, t.....	769	587	20.0	252	261	8.9	31.7	22.1	23.9	23.9	8	13.6	240	287	9.8
Toronto, c.....	14,979	13,888	20.9	7,074	6,737	10.1	22.6	291	21.0	17.3	216	15.6	10,241	11,928	17.9
Waterloo, c.....	560	611	20.4	142	180	6.0	15.7	10	16.4	13.2	8	13.1	164	218	7.3
Welland, c.....	837	761	19.0	297	312	7.8	24.1	17	22.3	17.4	13	17.1	317	387	9.7
Windsor, c.....	2,498	3,791	19.7	1,274	1,673	8.7	24.7	85	22.4	19.1	63	16.6	1,217	1,798	9.3
Woodstock, c.....	468	430	17.9	191	224	9.3	23.5	27	62.8	17.5	22	51.2	185	229	9.5
Manitoba—															
Brandon, c.....	637	541	18.0	275	292	9.7	29.8	10	18.5	22.0	10	18.5	234	263	8.8
Fort Garry, s.m.....	430	368	17.4	88	110	5.2	15.3	8	21.7	13.9	5	13.6	87	119	5.6
Kildonan East, c.....	578	478	16.6	154	173	6.0	16.3	6	12.6	13.1	3	6.3	162	206	7.2
Kildonan West, c.....	372	302	13.6	136	154	6.9	11.3	3	9.9	8.1	2	6.6	72	111	5.0
St. Boniface, c.....	1,026	860	19.9	317	253	5.9	16.6	9	10.5	12.5	8	9.3	312	354	8.2
St. James, c.....	620	439	12.3	234	231	6.5	17.7	7	15.9	14.8	6	13.7	228	270	7.6
St. Vital, c.....	659	507	17.2	177	205	6.9	17.6	11	21.7	12.4	8	15.8	140	160	5.4
Winnipeg, c.....	5,788	4,689	18.2	2,672	2,703	10.5	21.7	83	17.7	16.0	57	12.2	2,620	2,788	10.8
Saskatchewan—															
Moose Jaw, c.....	782	567	17.0	333	403	12.1	22.5	18	31.7	18.2	15	26.5	292	320	9.6
Prince Albert, c.....	708	508	19.3	186	190	7.2	21.2	8	15.7	16.9	7	13.8	266	275	10.5
Regina, c.....	3,265	2,988	22.8	820	922	7.0	23.0	65	21.8	17.6	53	17.7	1,004	1,151	8.8
Saskatoon, c.....	2,770	2,655	22.9	769	867	7.5	20.4	61	23.0	15.5	48	18.1	1,923	1,136	9.8

Alberta											
Calgary, c.....	8,083	7,129	21.6	2,002	2,252	6.8	22.0	125	17.5	16.2	100
Edmonton, c.....	9,704	8,519	22.6	2,014	2,142	5.7	21.2	163	19.1	15.9	117
Lethbridge, c.....	841	652	17.5	282	276	7.4	21.9	11	16.9	15.7	10
Medicine Hat, c.....	569	425	16.6	244	290	11.3	22.1	10	23.5	17.9	7
Red Deer, c.....	676	557	21.3	138	158	6.0	23.7	10	18.0	18.9	9
British Columbia—											
Burnaby, d.m.....	2,057	1,689	15.1	769	841	7.5	19.6	34	20.1	14.6	22
Chilliwack, d.m.....	441	343	17.1	129	141	7.0	24.0	7	20.4	15.9	4
Cogitiam, d.m.....	745	700	17.1	147	170	4.2	17.4	10	14.3	12.6	7
Delta, d.m.....	332	291	14.1	100	95	4.6	8.4	5	17.2	5.4	2
New Westminster, c.....	566	588	15.5	365	401	10.5	18.1	9	15.3	13.8	7
North Vancouver, c.....	550	514	19.1	219	241	9.0	14.9	10	19.5	11.3	6
North Vancouver, d.m.....	864	718	14.9	228	222	4.6	14.8	10	13.9	11.3	5
Prince George, c.....	623	719	29.4	99	113	4.6	23.4	14	19.5	16.4	10
Richmond, d.m.....	1,003	853	16.9	231	243	4.8	17.6	10	11.7	12.7	4
Saanich, d.m.....	1,042	829	14.1	416	457	7.8	16.9	18	21.7	12.7	14
Surrey, d.m.....	1,761	1,452	17.7	550	611	7.5	19.5	30	20.7	13.2	19
Vancouver, c.....	6,743	6,410	15.6	4,758	4,960	12.1	18.2	138	21.5	13.6	105
Victoria, c.....	972	818	14.2	808	972	16.9	21.4	19	23.2	14.4	17
West Vancouver, d.m.....	373	362	11.3	203	241	7.5	13.9	7	19.3	8.0	6

¹ As at the date of the 1966 Census; residents only. ² Deaths under one year of age. ³ Deaths under 28 days. ⁴ By place of occurrence. ⁵ Per 1,000 population. ⁶ Per 1,000 live births. ⁷ Population fewer than 20,000 at date of 1966 Census but included as the largest urban centre in Prince Edward Island.



Section 2.—Births*

No accurate figures on Canadian crude† birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates for each ten-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data:—

Intercensal Period	Estimated Average Annual Crude Birth Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Crude Birth Rate (per 1,000 Population)
1851-61.....	45	1891-1901.....	30
1861-71.....	40	1901-11.....	31
1871-81.....	37	1911-21.....	29
1881-91.....	34		

* Unless otherwise indicated, "births" in this Section refers to infants born alive; stillbirths are dealt with under a separate heading on pp. 238-239 and under multiple births on p. 233. For international comparisons, see Section 7, pp. 264-265.

† A crude rate is one based on the *total* population.

The general trend in the national crude birth rate (i.e., per 1,000 total population) since 1925 is shown in the chart on p. 230 and since 1941 in Table 1. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930s and during World War II to 21.3 in 1945, and in the two years following the War rose to a postwar high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5 but has since been declining and in 1967 reached 18.2, the lowest on record. Part of this decline is attributable to the fact that the crude birth rate is based on *total* population, which now includes larger proportions of 'non-productive' population, as well as to the fact that the large, immediate postwar cohorts of married women are now approaching the end of their reproductive periods and have completed their families. Further, even if the annual number of births were to remain stable, the net effect of an increase in population would be a declining crude birth rate. There is no direct evidence as to the influence of contraceptives in the declining birth rate in recent years.

The rates in most provinces followed trends very similar to the national trend but showed some regional differences in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during the 1951-55 period than during 1946-50 and those for Quebec and the Maritimes were lower than during 1946-50. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the 1956-60 period. However, in 1967 most of the provinces recorded their lowest rate since the early years of the War, while Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba and Saskatchewan had *record* low rates.

It is often erroneously assumed that the Province of Quebec has not only the largest number of births annually but the highest rate in Canada. Since the late 1930s or early 1940s Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 224-225, shows that six provinces—Newfoundland, Alberta, New Brunswick, Prince Edward Island, Nova Scotia and Saskatchewan, in that order—had higher crude rates than Quebec or Ontario in 1966, followed by Manitoba and British Columbia, and that, in 1967, Quebec had the second lowest crude birth rate, exceeded only by British Columbia. However, since these crude rates are based on the *total* population they do not reflect the true fertility of the women of reproductive ages in the different provinces or the number married within these reproductive ages. A more accurate measure of the true birth rate is one based on the number of married women between the ages of 15 and 45 (see pp. 233-235).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1967, 127,509 babies were born to Ontario mothers as compared with 101,471 to Quebec mothers. Altogether, 370,894 children were born alive in Canada in 1967, 108,381 fewer than the record 479,275 born in 1959 and 16,816 fewer than the number born during 1966.

Sex of Live Births.—With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless, it is so much an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries—although there is no generally accepted explanation for it—is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,064 during these four years as compared with averages of 1,054 between 1931-41 and 1,056 since 1946. In 1967, 1,049 male infants were born for every 1,000 females—the lowest ratio since 1941.

3.—Sex Ratios of Live Births, 1941-67

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
No.	No.	No.	No.	No.	No.	No.	No.
1941.....	131,175	124,142	1,057	1962.....	240,870	228,823	1,053
1951.....	195,918	185,174	1,058	1963.....	238,865	226,902	1,053
1958.....	241,675	228,443	1,058	1964.....	232,657	220,258	1,056
1959.....	246,073	233,202	1,055	1965.....	215,112	203,483	1,057
1960.....	246,029	232,522	1,058	1966.....	198,928	188,782	1,054
1961.....	244,403	231,297	1,057	1967.....	189,847	181,047	1,049

Hospitalized Births.—In 1967, 99.4 p.c. of all Canadian births occurred in hospital as compared with 90.2 p.c. ten years previously. Before the initiation in 1958 of the federal-provincial hospital insurance programs—in which all provinces were participating by 1961—there were rather wide variations among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas. Little variation now exists and only in the Yukon and Northwest Territories do the percentages fall below 99.2 p.c.; in the Yukon Territory it was 95.3 p.c. in 1967 and in the Northwest Territories 84.4 p.c.

Births in Urban Centres.—Table 2, pp. 226-229, shows the number of births in 1966, as compared with the average for 1961-65, to mothers residing in each urban centre of 20,000 population or over in 1966. Because the populations of urban centres are not known for intercensal years, birth rates cannot be computed for the 1961-65 period.

Illegitimacy.*—In 1967, 8.3 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world but has been rising recently, as shown in Table 4. In some provinces the percentages of illegitimate births have more than doubled during the past 20 years.

* The term "illegitimate", as used here, does not refer to all births conceived out of wedlock but is necessarily restricted to those in which parents reported themselves as not having been married to each other at the time of birth or registration and, in Ontario, to those in which the marital status of the mother was reported as "single" at the time of birth or registration.

4.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-67

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada ¹
ILLEGITIMATE LIVE BIRTHS													
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1941-45	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
" 1961-65	716	132	1,437	803	5,595	6,519	1,672	1,565	2,786	3,137	91	152	24,605
1965.....	773	148	1,520	840	6,223	7,787	1,805	1,772	3,197	3,731	100	182	28,073
1966.....	832	145	1,551	882	6,366	8,476	1,844	1,923	3,198	3,926	72	176	29,391
1967.....	858	138	1,544	861	6,727	8,935	1,915	1,916	3,518	4,194	86	223	30,915
PERCENTAGES OF TOTAL LIVE BIRTHS													
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1941-45	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
" 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
" 1961-65	4.7	4.8	7.8	5.1	4.3	4.3	7.6	6.9	7.5	8.5	17.8	13.0	5.4
1965.....	5.2	5.9	9.2	5.9	5.2	5.5	9.0	8.6	9.8	11.1	25.4	15.3	6.7
1966.....	5.9	6.6	10.2	6.9	5.8	6.4	10.2	10.1	10.5	12.1	19.5	15.2	7.6
1967.....	6.7	6.7	10.8	7.0	6.6	7.0	11.1	10.6	11.5	12.7	22.3	18.4	8.3

¹ Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1951.

Multiple Births.—Approximately one confinement in 99 in Canada resulted in the birth of more than one child in 1967 as compared with one in 85 several years ago; in other words, the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. One out of 100 confinements resulted in twins and one out of about 10,000 in triplets. Two sets of quadruplets were born in Canada during 1960—the first since 1957—and one set in each of 1962, 1963 and 1964; there were no quadruplets in 1965, 1966 or 1967. In 1967 a total of 371,378 mothers bore a total of 375,164 infants, of which 370,894, or almost 99 out of every 100, were born alive.

Table 5 shows that the proportion of stillbirths is higher among multiple than among single births.

5.—Single and Multiple Births, Live and Stillborn,¹ 1964-67

Confinements and Births	Numbers				Percentages			
	1964 ²	1965 ³	1966 ⁴	1967 ³	1964	1965	1966	1967
Confinements.....	453,614	419,093	388,162	371,378	100.0	100.0	100.0	100.0
Single.....	448,814	414,754	384,183	367,629	98.9	99.0	99.0	99.0
Twin.....	4,751	4,307	3,948	3,712	1.0	1.0	1.0	1.0
Triplet.....	48	32	31	37	--	--	--	--
Quadruplet.....	1	—	—	—	--	—	—	—
Births.....	458,464	423,464	392,172	375,164	100.0	100.0	100.0	100.0
Single—								
Live.....	443,602	410,123	379,970	363,601	98.8	98.9	98.9	98.9
Stillborn.....	5,212	4,631	4,213	4,028	1.2	1.1	1.1	1.1
Twin—								
Live.....	9,174	8,382	7,653	7,187	96.5	97.3	96.9	96.8
Stillborn.....	328	232	243	237	3.5	2.7	3.1	3.2
Triplet—								
Live.....	136	90	87	106	94.4	93.8	93.5	95.5
Stillborn.....	8	6	6	5	5.6	6.3	6.5	4.5
Quadruplet—								
Live.....	3	—	—	—	75.0	—	—	—
Stillborn.....	1	—	—	—	25.0	—	—	—
Totals, Live Births...	452,915	418,595	387,710	370,894	98.8	98.9	98.9	98.9
Totals, Stillborn.....	5,549	4,869	4,462	4,270	1.2	1.1	1.1	1.1

¹ Unless otherwise indicated, includes only fetuses of 28 or more full weeks gestation.
 stillbirths of 20-27 weeks gestation.

³ Includes 22 stillbirths of 20-27 weeks gestation.

² Includes 29
⁴ Includes 33

Fertility Rates.—The sex and age composition of a population is obviously an important factor in determining crude birth, marriage and death rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries—or of different regions within a country—even though the actual rates of reproduction or *fertility* of the women in these age groups in each country or region are identical.

A more accurate measure of the fertility of a population would be one based on the number of women of reproductive age, that is those 'able' to bear children, and a still more accurate measure would be one based on the number within this group that are married,

that is those 'eligible', as it were, to bear children. Each type of rate has its uses, depending on the comparisons required. The two types are compared in Table 6, and indicate the variations in each type as between provinces and the provincial trends over the years 1964-67.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 has been declining for the past few years, dropping from 114.5 in 1964 to 86.7 in 1967. However, the rates varied among the provinces from 78.1 to 161.9 during the past four years; in 1967, Newfoundland, Prince Edward Island, New Brunswick, Alberta, Saskatchewan and Nova Scotia had the highest rates and Quebec, British Columbia, Ontario and Manitoba, the lowest, in order of mention. On the other hand, the average annual number of infants born to every 1,000 *married* women in the country as a whole dropped from 164.2 to 124.4 during the same period. According to this measure, the four eastern provinces and Saskatchewan had, on the whole, the highest rates.

6.—Crude Fertility Rates, by Province, 1964-67

Province or Territory	Rates per 1,000 Total Women 15-44 Years of Age ¹				Rates per 1,000 Married Women 15-44 Years of Age ¹			
	1964 ²	1965 ²	1966	1967	1964 ²	1965 ²	1966	1967
Newfoundland.....	161.9	159.5	149.0	132.5	246.9	246.3	231.3	207.0
Prince Edward Island.....	141.3	129.7	112.1	102.4	219.6	200.8	174.9	161.8
Nova Scotia.....	126.0	113.0	103.7	96.4	180.8	162.2	148.4	138.9
New Brunswick.....	131.5	119.8	106.3	101.4	199.0	183.7	163.1	157.0
Quebec.....	108.3	97.5	86.6	78.1	174.2	156.9	139.2	124.6
Ontario.....	112.0	101.1	91.2	85.0	152.7	138.1	124.7	116.5
Manitoba.....	115.4	105.2	94.7	90.0	159.3	146.3	131.6	125.4
Saskatchewan.....	129.2	115.1	105.8	99.0	178.2	157.9	144.3	136.2
Alberta.....	124.9	111.1	102.4	100.2	163.8	144.9	134.3	131.5
British Columbia.....	104.7	94.7	87.5	84.0	136.6	122.8	113.0	108.8
Yukon Territory.....	171.3	152.9	125.4	128.3	..	..	144.5	..
Northwest Territories.....	243.5	233.5	210.2	224.1	..	..	269.3	..
Canada².....	114.5	103.4	93.4	86.7	164.2	148.4	133.9	124.4

¹ Since the number of births to women over 44 is quite small, rates are here restricted to women under 45.

² Excludes the Yukon and Northwest Territories.

The rates shown in Table 6 are *crude* in the sense that they do not take into account differences in fertility in the component age periods within the female reproductive life span, nor the proportions of married women in each age period. It is therefore conventional practice to calculate what are termed *age-specific fertility rates*, i.e., the number of infants born annually to every 1,000 women in *each* of the reproductive age periods, again either for all women or for those who are married. Table 7 provides these two sets of rates—the former for 1941, 1951 and 1958-67 and the latter for 1962-67 in addition to the census years from 1941 to 1961.

Another measure of fertility in a country is obtainable from what is conventionally referred to as a *gross reproduction rate*. The gross reproduction rates shown in Table 7 indicate the average number of female children born each year to each woman living

through the child-bearing ages. In other words, this figure represents the average number of females that *would* be born to each woman who lived to age 50 *if* the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A gross reproduction rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself. Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 to a record high of 1.915 in 1959; in 1967 the rate stood at 1.261, still 26 p.c. more than the number required for the population to replace itself but down one third from that of five years ago. With minor exceptions, provincial reproduction rates are also well above the replacement level.

Table 7 indicates that in 1967, considering all women whether married or not, women in their 20s were the most reproductive, as might be expected; on the average, for every 1,000 women between the ages of 20 and 25, 161 infants were born during that year or, expressed another way, about one woman out of six in that age group gave birth to a live-born infant. This compares with a rate of 151 for women in the age group 25-29. However, among married women, teen-age mothers have consistently had the highest fertility, with about two out of five bearing a child in 1967, while more than one out of every four married women in their early 20s had a child as compared with about one in five women in their late 20s.

7.—Age-Specific Fertility Rates per 1,000 Women, by Age Group, 1941-67

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941)

Year	Age Group							Gross Reproduction Rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
	TOTAL WOMEN							
1941.....	30.7	138.4	159.8	122.3	80.0	31.6	3.7	1.377
1951.....	48.1	188.7	198.8	144.5	86.5	30.9	3.1	1.701
1958.....	59.2	226.5	223.3	147.9	87.6	28.9	2.7	1.886
1959.....	60.4	233.8	226.7	147.7	87.3	28.5	2.7	1.915
1960.....	59.8	233.5	224.4	146.2	84.2	28.5	2.4	1.893
1961.....	58.2	233.6	219.2	144.9	81.1	28.5	2.4	1.868
1962.....	55.0 ^r	231.6 ^r	214.6 ^r	143.1 ^r	77.1 ^r	27.6 ^r	2.1	1.830 ^r
1963.....	53.1 ^r	226.0 ^r	210.6 ^r	140.3 ^r	75.8 ^r	25.9	2.1	1.788 ^r
1964.....	50.2 ^r	212.8 ^r	203.1 ^r	134.9 ^r	72.0 ^r	25.1 ^r	2.1	1.702 ^r
1965.....	49.3 ^r	188.6 ^r	181.9 ^r	119.4 ^r	65.9 ^r	22.0 ^r	2.0	1.529 ^r
1966.....	48.2	169.1	163.5	103.3	57.5	19.1	1.7	1.369
1967.....	45.2	161.1	151.4	91.4	50.6	15.9	1.5	1.261
	MARRIED WOMEN							
1941.....	453.1	340.2	237.8	158.3	99.1	38.9	4.5	...
1951.....	498.5	350.4	248.1	168.7	100.6	36.6	3.7	...
1961.....	541.2	374.4	255.6	161.4	89.9	32.1	2.8	...
1962.....	526.7 ^r	368.9 ^r	249.8 ^r	158.6 ^r	85.1 ^r	31.0 ^r	2.5	...
1963.....	512.7 ^r	362.2 ^r	244.9 ^r	154.8 ^r	83.4 ^r	29.0 ^r	2.4	...
1964.....	487.2 ^r	344.4 ^r	235.2 ^r	148.2 ^r	79.0 ^r	27.9 ^r	2.4	...
1965.....	481.9 ^r	307.4 ^r	209.7 ^r	130.6 ^r	71.9 ^r	24.3 ^r	2.3	...
1966.....	465.8	280.2	187.3	112.5	62.5	21.0	2.0	...
1967.....	409.7	271.8	174.0	99.3	54.5	17.3	1.6	...

Age of Parents.—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 8.

Almost 9 p.c. of the legitimate children born in 1966 were born to mothers under 20 years of age, in two fifths of the births the mother was under 25 years, and in over two thirds, under 30 years; in over one fifth of the births the father was under 25 years of age, and in over one half of all births the father was under 30 years. On the other hand, over two fifths of the illegitimate infants were born to mothers under 20 years of age and an additional 35 p.c. to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1966 was 27.5 and of the fathers 30.8 years; ten years ago the average ages of the parents were 28.4 and 31.7, and thirty years ago 29.2 and 33.6, respectively.

The median age of unmarried mothers who bore a live-born child in 1966 was 20.8; that is, half of the mothers of the 28,559 'illegitimate' children delivered in 1966 were under 20.8 years of age.

8.—Live Births, by Age of Parents, 1966

(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years.....	5,826	1.7	30,876	8.9	11,579	41.3
Under 15 years.....	—	—	26	--	186	0.7
15 years.....	—	—	245	0.1	578	2.1
16 ".....	27	--	1,466	0.4	1,412	5.0
17 ".....	273	0.1	4,270	1.2	2,515	9.0
18 ".....	1,376	0.4	9,495	2.8	3,257	11.6
19 ".....	4,150	1.2	15,374	4.5	3,631	12.9
20-24 ".....	69,696	20.2	111,019	32.2	9,849	35.1
25-29 ".....	102,834	29.9	95,812	27.8	3,549	12.7
30-34 ".....	78,834	22.9	60,035	17.4	1,727	6.2
35-39 ".....	50,482	14.7	34,870	10.1	973	3.5
40-44 ".....	24,404	7.1	11,491	3.3	343	1.2
45-49 ".....	8,735	2.5	899	0.3	25	0.1
50 years or over.....	3,549	1.0	10	--	1	--
Totals, Stated Ages.....	344,360	100.0	345,012	100.0	28,046	100.0
Ages not stated.....	707	...	55	...	513	...
Totals, All Ages.....	345,067	100.0	345,067	100.0	28,559	100.0
Average ages..... yrs.	30.8		27.5		23.0	
Median ages ¹ "	29.7		26.4		20.8	

¹ The age above and below which half of the births occurred.

Order of Birth.—Table 9 shows the order of birth of all live-born infants in 1966 according to the age of the mother. As would be expected, 33,860, or almost four fifths of the 42,455 infants born to mothers under 20 years of age, were the first live-born child, whereas almost 13 out of every 25 of the children born to mothers of 20-24 years were their second or later live-born child. In 1966, 212 infants were born to mothers who had not yet reached their 15th birthday.

9.—Order of Birth of Live-Born Children, by Age of Mother, 1966

(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1st child	209	33,651	58,475	21,591	6,348	2,371	585	33	491	123,754	33.1
2nd "	3	7,372	39,152	29,748	11,412	4,134	927	39	28	92,815	24.8
3rd "	—	1,085	15,475	22,771	13,782	6,023	1,232	69	8	60,445	16.2
4th "	—	125	5,345	12,764	11,202	6,082	1,527	90	5	37,140	9.9
5th "	—	9	1,753	6,517	7,405	4,974	1,549	99	2	22,308	6.0
6th "	—	—	495	3,213	4,404	3,651	1,295	96	1	13,155	3.5
7th "	—	—	121	1,541	2,947	2,540	1,014	81	1	8,245	2.2
8th "	—	—	42	755	1,877	1,867	849	79	2	5,471	1.5
9th "	—	—	7	309	1,119	1,329	680	73	—	3,517	0.9
10th "	—	—	1	114	616	1,010	584	62	—	2,387	0.6
11th "	—	—	—	25	364	706	451	41	—	1,587	0.4
12th "	—	—	—	5	178	498	356	40	—	1,077	0.3
13th "	—	—	—	1	69	324	285	35	1	715	0.2
14th "	—	—	—	3	23	164	194	26	—	410	0.1
15th "	—	—	—	—	7	87	144	21	—	259	0.1
16th "	—	—	—	—	3	44	75	21	—	143	—
17th "	—	—	—	—	—	22	41	15	—	78	—
18th "	—	—	—	—	1	9	18	5	—	33	—
19th "	—	—	—	—	—	3	14	8	—	25	—
20th or over.....	—	—	—	—	—	2	12	2	—	16	—
Not stated.....	—	1	2	4	5	3	2	—	29	46	—
Totals	212	42,243	120,868	99,361	61,762	35,843	11,834	935	568	373,626	100.0

Table 10 summarizes the pattern of family formation since 1941. As will be noted, the percentages of first and second children have been increasing in recent years.

10.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1941-67

(Exclusive of Newfoundland)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1941.....	32.7	21.8	13.5	32.0	100.0
1951.....	26.7	25.8	17.6	29.9	100.0
1958.....	25.4	23.8	18.2	32.6	100.0
1959.....	24.8	24.0	18.2	32.9	100.0
1960.....	24.5	23.8	18.5	33.1	100.0
1961.....	24.1	23.6	18.5	33.8	100.0
1962.....	24.0	23.7	18.4	33.9	100.0
1963.....	24.3	23.6	18.5	33.6	100.0
1964.....	25.0	23.8	18.3	32.9	100.0
1965.....	27.1	24.3	17.6	31.0	100.0
1966.....	29.9	25.5	16.9	27.6	100.0
1967.....	32.6	26.5	16.3	24.6	100.0

Birthweight.—Excluding Newfoundland, information on birthweight of newborn infants has recently become available from provincial records of birth. These data, in addition to their usefulness in calculating the average weights of newborn infants, are of importance from the public health and medical points of view in throwing light on the number of immaturely developed foetuses that are delivered alive. According to criteria recommended by the World Health Organization, infants of 5½ lb. or less at birth are considered 'immature' and hence exposed to a much greater risk of dying than those over this weight. Weight at birth depends on a host of maternal factors, most of which are not

included in the birth records, but some information is available on the age of the mother and length of pregnancy before delivery.* Analysis of this information shows that (1) there are variations in average weight according to the age of the mother, (2) women under 20 and over 35 tend to produce higher proportions of immature infants, so that the late 20s and early 30s would appear to be the ideal ages for motherhood, and (3) almost all infants of less than 28 weeks gestation are delivered 'immature' according to the definition. The average single male infant born at full term weighs about 7½ lb. at birth and the average female about 4 oz. less.

Stillbirths.†—The 4,248 stillbirths of at least 28 weeks gestation that were delivered in 1967 represented a ratio of 11.5 for every 1,000 fetuses born alive. As is evident from Table 11, the stillbirth rate has been decreasing steadily—except for a slight increase in 1967—and has been cut by more than half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces have been reduced more than in others. The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers but the difference is narrowing.

11.—Stillbirths and Ratios per 1,000 Live Births, by Province, 1941-67

Year	Born to All Mothers													Born to Unmarried Mothers ¹	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N. W. T.	Canada ²	No.	P.C. of Total
NUMBERS (28 WEEKS OR MORE GESTATION)															
Av. 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
" 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714	291	4.51
" 1961-65	261	47	256	220	1,727	1,818	278	242	358	370	5	19	5,600	327	6.12
1965.....	254	35	203	188	1,438	1,631	258	204	290	323	4	19	4,847	348	7.58
1966.....	188	34	212	174	1,301	1,554	193	172	280	301	2	18	4,429	345	8.13
1967.....	183	24	203	169	1,232	1,419	205	189	286	311	5	22	4,248	372	9.15
RATIOS															Ratio per 1,000 Illegitimate Live Births ¹
Av. 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
" 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3	15.6	
" 1961-65	17.3	17.1	13.8	14.0	13.1	11.9	12.5	10.6	9.7	10.1	9.0	16.0	12.3	13.7	
1965.....	17.2	13.9	12.3	13.3	11.9	11.5	12.9	10.0	8.9	9.6	9.3	16.0	11.6	12.7	
1966.....	13.3	15.5	13.9	13.7	11.8	11.8	10.7	9.0	9.2	9.3	5.4	15.5	11.4	12.1	
1967.....	14.2	11.7	14.2	13.7	12.1	11.1	11.9	10.5	9.3	9.5	13.0	18.2	11.5	12.4	

¹ Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1941-50. for Newfoundland are included from 1949.

² Figures

Table 12 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth ratios for mothers of all ages have been declining, they continue to be three to four times as high for mothers over 40 years of age as for mothers under 30. The average age of mothers who bore stillborn children in 1966 was

* Obtainable from the Vital Statistics Section, DBS.

† Stillbirth figures given here refer only to fetuses of 28 or more weeks gestation which "showed no sign of life". Up to the end of 1963, only fetuses delivered after at least 28 weeks pregnancy which showed no sign of life were required to be registered with the provincial authorities; as of Jan. 1, 1964, all provinces (except Newfoundland) provide for the compulsory registration of all stillbirths of 20 or more weeks gestation, a 'stillbirth' being defined as "the complete expulsion or extraction from its mother, after at least 20 weeks pregnancy, of a product of conception in which, after such expulsion or extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord, or unmistakable movement of voluntary muscle". Available data for stillbirths of 20-27 weeks pregnancy are not shown here but are obtainable from the Vital Statistics Section, DBS.

29.5 years; the median age was 28.5. The average age of mothers who bore legitimate live-born children was 27.5 and of those who bore illegitimate live-born offspring was 23.0. Causes of stillbirths in 1966 are shown in Table 13.

12.—Stillbirths and Ratios per 1,000 Live Births, by Age of Mother, 1966

(Exclusive of Newfoundland)

Age Group of Mother	Live Births	Stillbirths	Stillbirth Ratio per 1,000 Live Births
	No.	No.	No.
Under 20 years.....	42,455	396	9.3
20-24 ".....	120,868	1,014	8.4
25-29 ".....	99,361	945	9.5
30-34 ".....	61,762	773	12.5
35-39 ".....	35,843	694	19.4
40-44 ".....	11,834	358	30.3
45-49 ".....	924	45	48.7
50 years or over.....	11	—	—
Age not stated.....	568	16	...
Totals, All Ages.....	373,626	4,241	11.4
Average age of mothers..... yrs.	27.2	29.5	...
Median age of mothers ¹ "	26.0	28.5	...

¹ The age above and below which half of the stillbirths occurred.

13.—Stillbirths, by Cause, 1966

International List No.	Cause	Males	Females	Total
		No.	No.	No.
Y 30	Chronic disease in mother.....	92	59	151
Y 31	Acute disease in mother.....	15	11	26
Y 32	Diseases and conditions of pregnancy and childbirth.....	189	157	346
Y 33	Absorption of toxic substance from mother.....	1	1	2
Y 34	Difficulties in labour.....	117	74	191
Y 35	Other causes in mother.....	43	24	67
Y 36	Placental and cord conditions.....	966	736	1,702
Y 37	Birth injury.....	23	14	37
Y 38	Congenital malformation of foetus.....	246	335	581
Y 39	Diseases of foetus and ill-defined causes.....	695	631	1,326
All Causes.....		2,387	2,042	4,429

Section 3.—Deaths*

No official crude† death rates are available prior to 1921, but some indication of these may be obtained from studies of the early censuses as follows:—

Intercensal Period	Estimated Average Annual Crude Death Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Crude Death Rate (per 1,000 Population)
1851-61.....	22	1891-1901.....	16
1861-71.....	21	1901-11.....	13
1871-81.....	19	1911-21.....	13
1881-91.....	18		

* For international comparisons, see Section 7, pp. 264-265.

† A crude rate is one based on the total population.

As is typical of pioneer populations, Canada had a high death rate in the mid-1850s when the country was still in the throes of pioneer settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it is assumed that, while mortality at all ages was high, the rate among infants, children and young adults must have been particularly high since even in the 1920s mortality in these ages was still quite high. With the gradual increase in population density and in urbanization and improved sanitation and medical services, the crude rate was halved during the 80 years between 1851 and 1930, dropping from about 22 to 11. It declined steadily to slightly over 8 in the late 1950s and dropped to a low of 7.4 in 1967. This is one of the lowest crude death rates in the world.

Table 1, pp. 224-225, shows the trends since 1941 in the provinces and territories. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is attributable mainly to a high proportion of people in the older age groups.

Subsection 1.—General Mortality

Age and Sex Distribution of Deaths.—During the period of national vital statistics (1921 to date), the mortality pattern at all ages has been steeply downward. Of major significance in lowering the over-all death rate were the reductions in infant mortality, in childhood death rates and in those of young adults. In 1931, over 19 p.c. of all male deaths occurred among persons of five to 44 years of age; in 1966, 10.8 p.c. took place in this age group. Among females in the same age group the proportion dropped from just under 22 p.c. in 1931 to 7.7 p.c. in 1966.

Tables 14 and 15 illustrate the very large reductions in death rates that have taken place since 1931 in each age group of the population. By far the greatest reductions have been among the young of both sexes. However, even though the rates for females at every age have always been consistently lower than those for males, female death rates have been declining faster and the differences are gradually widening. Between 1931 and 1966 the rates for all females dropped by 35.4 p.c. as compared with only 17.1 p.c. for males.

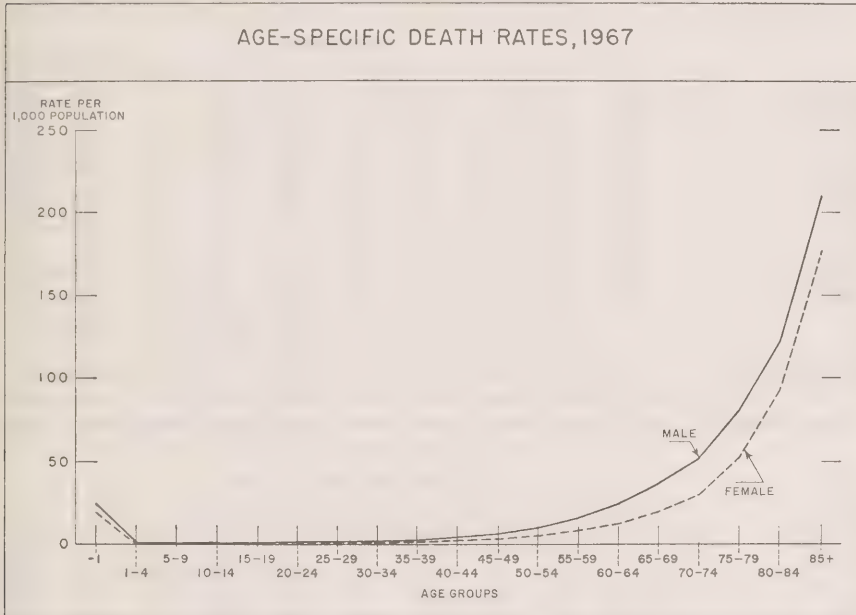
14.—Percentage Change in Death Rates for Each Age Group, 1931 to 1966

Age Group	Males	Females	Age Group	Males	Females
Under 1 year.....	-72.7	-72.8	50-54 years.....	-9.3	-44.4
1-4 years.....	-83.8	-85.2	55-59 ".....	—	-42.5
5-9 ".....	-72.7	-76.5	60-64 ".....	+ 4.8	-41.1
10-14 ".....	-60.0	-80.0	65-69 ".....	+ 2.8	-35.6
15-19 ".....	-48.0	-77.3	70-74 ".....	- 3.5	-37.1
20-24 ".....	-43.7	-84.4	75-79 ".....	- 8.6	-35.0
25-29 ".....	-52.9	-84.2	80-84 ".....	- 7.5	-26.4
30-34 ".....	-51.4	-78.6	85 years or over.....	- 6.4	-13.7
35-39 ".....	-47.6	-72.9			
40-44 ".....	-37.0	-60.0			
45-49 ".....	-20.8	-50.0	All Ages.....	-17.1	-35.4

Despite the very considerable reduction that has taken place in infant mortality, more deaths still occur in the first year of life than in any other single year. Of the total deaths occurring in 1931, almost one quarter were of children under five years of age and more than three quarters of those were of children under one year of age; of the deaths occurring in 1966, about 7 p.c. were of children under five years and of those about 84 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.

The reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death. In 1931, the average age at death of males was 43.1 years and of females 44.8

years; by 1966 this had advanced to 62.0 years and 65.9 years, respectively. On the other hand, the median age increased during the same period from 50.8 to 68.4 for males, and from 52.1 to 73.5 for females. This means that half of all the females who died during 1966 were over 73.5 years of age, while for males half had reached 68.4 years. Since 1931, the gains in median age were 17.6 years for males and 21.4 for females.



15.—Distribution of Deaths by Age and Sex, 1931, 1941, 1951, 1961 and 1966

Age Group	1931 ¹		1941 ¹		1951		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
NUMBERS										
Under 1 year.....	11,667	8,693	8,788	6,448	8,375	6,298	7,447	5,493	5,138	3,822
1-4 years.....	2,844	2,533	1,878	1,566	1,421	1,151	1,154	844	988	775
5-9 ".....	1,241	963	888	670	711	466	672	405	669	480
10-14 ".....	821	806	787	536	461	284	527	278	620	318
15-19 ".....	1,311	1,132	1,118	823	721	457	840	322	1,212	467
20-24 ".....	1,502	1,453	1,332	1,039	1,009	549	969	342	1,324	403
25-29 ".....	1,388	1,414	1,317	1,173	888	660	895	418	980	384
30-34 ".....	1,301	1,432	1,211	1,148	1,070	778	1,041	562	1,054	584
35-39 ".....	1,512	1,574	1,497	1,242	1,281	1,015	1,422	880	1,456	845
40-44 ".....	1,888	1,493	1,744	1,464	1,756	1,266	1,916	1,099	2,146	1,293
45-49 ".....	2,314	1,738	2,416	1,817	2,463	1,607	2,993	1,617	3,111	1,823
50-54 ".....	2,855	1,993	3,355	2,227	3,525	2,083	4,242	2,237	4,855	2,434
55-59 ".....	3,057	2,246	4,394	2,851	4,741	2,832	5,404	2,749	6,352	3,115
60-64 ".....	3,583	2,855	5,288	3,483	6,465	3,902	7,028	3,725	7,911	4,064
65-69 ".....	4,249	3,348	6,057	4,412	8,007	5,119	8,545	5,304	9,226	5,393
70-74 ".....	4,867	4,073	6,495	4,981	8,748	6,429	10,582	7,058	10,549	7,063
75-79 ".....	4,368	4,029	6,421	5,461	8,748	6,904	10,970	8,290	11,102	8,695
80-84 ".....	3,206	3,215	5,020	4,906	6,232	6,130	8,635	7,871	10,006	9,048
85 years or over.....	2,555	2,998	3,846	4,540	5,336	6,319	7,337	8,782	9,214	10,964
Totals, All Ages	56,529	47,988	63,832	59,787	71,364	51,259	82,799	58,276	87,913	61,950

¹ Excludes the Yukon and Northwest Territories.

15.—Distribution of Deaths by Age and Sex, 1931, 1941, 1951, 1961 and 1966—concluded

Age Group	1931 ¹		1941 ¹		1951		1961		1966	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
PERCENTAGES										
Under 1 year.....	20.6	18.1	13.8	12.7	11.7	11.6	9.0	9.4	5.8	6.2
1-4 years.....	5.0	5.3	2.9	3.1	2.0	2.1	1.4	1.4	1.1	1.3
5-9 ".....	2.2	2.0	1.4	1.3	1.0	0.9	0.8	0.7	0.8	0.8
10-14 ".....	1.5	1.7	1.2	1.1	0.6	0.5	0.6	0.5	0.7	0.5
15-19 ".....	2.3	2.4	1.8	1.6	1.0	0.8	1.0	0.6	1.4	0.8
20-24 ".....	2.7	3.0	2.1	2.0	1.4	1.0	1.0	0.6	1.5	0.7
25-29 ".....	2.5	2.9	2.1	2.3	1.4	1.2	1.1	0.7	1.1	0.6
30-34 ".....	2.3	3.0	1.9	2.3	1.5	1.4	1.3	1.0	1.2	0.9
35-39 ".....	2.7	3.3	2.3	2.4	1.8	1.9	1.7	1.5	1.7	1.4
40-44 ".....	3.3	3.1	2.7	2.9	2.5	2.3	2.3	1.9	2.4	2.1
45-49 ".....	4.1	3.6	3.8	3.6	3.4	3.0	3.6	2.8	3.5	2.9
50-54 ".....	5.0	4.2	5.3	4.4	4.9	3.8	5.1	3.8	5.5	3.9
55-59 ".....	5.4	4.7	6.9	5.6	6.6	5.2	6.6	4.7	7.2	5.0
60-64 ".....	6.3	5.9	8.3	6.9	9.0	7.2	8.5	6.4	9.0	6.6
65-69 ".....	7.5	7.0	9.5	8.7	11.2	9.4	10.3	9.1	10.5	8.7
70-74 ".....	8.6	8.5	10.2	9.8	12.2	11.9	12.8	12.1	12.0	11.4
75-79 ".....	7.7	8.4	10.1	10.7	11.5	12.7	13.3	14.2	12.6	14.0
80-84 ".....	5.7	6.7	7.9	9.7	8.7	11.3	10.4	13.5	11.4	14.6
85 years or over.....	4.5	6.2	6.0	8.9	7.5	11.6	8.9	15.1	10.5	17.7
Totals, All Ages.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RATES PER 1,000 POPULATION										
Under 1 year.....	94.4	74.4	67.0	51.9	42.7	34.0	30.5	23.7	25.8	20.2
1-4 years.....	6.8	6.1	4.7	4.0	2.1	1.8	1.3	1.0	1.1	0.9
5-9 ".....	2.2	1.7	1.7	1.3	1.0	0.7	0.6	0.4	0.6	0.4
10-14 ".....	1.5	1.5	1.4	1.0	0.8	0.5	0.6	0.3	0.6	0.3
15-19 ".....	2.5	2.2	2.0	1.5	1.4	0.9	1.2	0.5	1.3	0.5
20-24 ".....	3.2	3.2	2.6	2.0	1.9	1.0	1.7	0.6	1.8	0.5
25-29 ".....	3.4	3.8	2.7	2.5	1.8	1.1	1.5	0.7	1.6	0.6
30-34 ".....	3.5	4.2	2.8	2.8	2.1	1.5	1.6	0.9	1.7	0.9
35-39 ".....	4.2	4.8	3.8	3.4	2.5	2.0	2.3	1.4	2.2	1.3
40-44 ".....	5.4	5.0	5.0	4.5	3.9	3.0	3.4	2.0	3.4	2.0
45-49 ".....	7.2	6.6	7.3	6.0	6.4	4.5	5.8	3.2	5.7	3.3
50-54 ".....	10.7	9.0	10.6	8.1	10.4	6.5	9.6	5.3	9.7	5.0
55-59 ".....	15.4	13.4	16.0	12.3	16.2	10.2	15.2	8.0	15.4	7.7
60-64 ".....	22.9	20.7	24.2	18.5	24.5	16.1	24.0	12.8	24.0	12.2
65-69 ".....	35.2	30.3	37.3	30.4	35.1	24.9	35.7	21.4	36.2	19.5
70-74 ".....	55.0	49.1	58.5	47.0	54.5	41.6	54.0	34.2	53.1	30.9
75-79 ".....	87.4	82.9	95.7	79.7	87.6	73.3	81.8	59.2	79.9	53.9
80-84 ".....	134.1	127.1	147.6	131.2	135.5	120.7	125.1	101.2	124.0	93.6
85 years or over.....	228.1	212.6	241.9	229.3	235.1	212.0	208.9	192.2	213.4	183.4
Totals, All Ages.....	10.5	9.6	10.8	9.1	10.1	7.8	9.0	6.5	8.7	6.2
Average age at death yrs.	43.1	44.8	51.5	53.4	56.3	58.7	59.7	63.1	62.0	65.9
Median age at death ² "	50.8	52.1	61.2	63.6	65.5	68.8	67.9	72.2	68.4	73.5

¹ Excludes the Yukon and Northwest Territories.
number of annual deaths occurred.² The age above and below which half of the total

Table 16 indicates the variations from province to province in average and median ages at death; these, in turn, are dependent in large measure on the age distribution of the population as well as on varying mortality rates at each age. For example, in Newfoundland a high mortality rate among infants and young children reduces the average and median age for that province, but the reverse is the case in British Columbia and several other provinces with older populations.

16.—Average and Median Ages at Death, by Sex and Province, 1966

Province or Territory	Average Age at Death		Median Age at Death ¹	
	Males	Females	Males	Females
	yrs.	yrs.	yrs.	yrs.
Newfoundland.....	55.1	59.6	64.5	70.4
Prince Edward Island.....	65.3	70.2	72.9	77.4
Nova Scotia.....	62.5	67.6	69.3	75.0
New Brunswick.....	61.8	65.9	69.3	73.9
Quebec.....	58.2	62.7	64.8	70.5
Ontario.....	63.1	67.7	68.6	74.4
Manitoba.....	64.8	68.3	71.3	75.4
Saskatchewan.....	64.9	66.4	72.6	75.1
Alberta.....	62.4	64.4	69.6	73.1
British Columbia.....	65.1	68.0	72.0	75.2
Yukon Territory.....	44.6	29.5	...	...
Northwest Territories.....	28.7	24.5	...	...
Canada.....	62.0	65.9	68.4	73.5

¹ The age above and below which half of the total number of annual deaths occurred.

Deaths in Urban Centres.—Table 2, pp. 226-229, shows the numbers of deaths in urban centres of 20,000 population or over in 1966 and the average numbers for the period 1961-65; death rates for urban centres cannot be computed for the 1961-65 period since their populations are not known for intercensal years.

Causes of Death.—Table 17 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. Over 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases, and nephritis. Because of the rise in the average age at death during the past thirty years, the proportion of deaths from causes that affect older people has increased. Cancer and diseases of the cardiovascular-renal systems now account for a larger proportion of all deaths. By the same token, deaths from causes that affect mainly children and young adults have declined.

17.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1965 and 1966

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1965	1966	1965	1966
B 1	001-008	Tuberculosis of respiratory system.....	629	599	3.2	3.0
B 2	010-019	Tuberculosis, other forms.....	68	70	0.3	0.3
B 3	020-029	Syphilis and its sequelæ.....	105	87	0.5	0.4
B 4	040	Typhoid fever.....	—	1	—	—
B 5	043	Cholera.....	—	—	—	—
B 6	045-048	Dysentery, all forms.....	3	12	—	0.1
B 7	050, 051	Scarlet fever and streptococcal sore throat.....	10	8	0.1	—
B 8	055	Diphtheria.....	6	7	—	—
B 9	056	Whooping cough.....	9	6	—	—
B10	057	Meningococcal infections.....	38	38	0.2	0.2
B11	058	Plague.....	—	—	—	—
B12	080	Acute poliomyelitis.....	1	—	—	—
B13	084	Smallpox.....	—	—	—	—
B14	085	Measles.....	71	50	0.4	0.2
B15	100-108	Typhus and other rickettsial diseases.....	—	—	—	—
B16	110-117	Malaria.....	—	—	—	—

17.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1965 and 1966—concluded

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1965	1966	1965	1966
B17	030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 086-096, 120-138	All other diseases classified as infective and parasitic.....	370	317	1.9	1.6
B18	140-205	Cancer (all malignant neoplasms).....	26,050	26,848	133.1	134.1
		Cancer.....	24,579	25,394	125.6	126.9
	(201)	Hodgkin's disease.....	297	292	1.5	1.5
	(204)	Leukemia and aleukemia.....	1,174	1,162	6.0	6.8
B19	210-239	Benign and unspecified neoplasms.....	294	301	1.5	1.5
B20	260	Diabetes mellitus.....	2,496	2,566	12.8	12.8
B21	290-293	Anemias.....	356	369	1.8	1.8
B22	330-334	Vascular lesions affecting central nervous system.....	15,669	15,658	80.1	78.2
B23	340	Non-meningococcal meningitis.....	178	158	0.9	0.8
B24	400-402	Rheumatic fever.....	45	19	0.2	0.1
B25	410-416	Chronic rheumatic heart disease.....	1,351	1,279	6.9	6.4
B26	420-422	Arteriosclerotic and degenerative heart disease.....	48,383	48,290	247.2	241.3
B27	430-434	Other diseases of heart.....	2,175	2,181	11.1	10.9
B28	440-443	Hypertension with heart disease.....	2,504	2,308	12.8	11.5
B29	444-447	Hypertension without mention of heart.....	776	680	4.0	3.4
B30	480-483	Influenza.....	439	598	2.2	3.0
B31	490-493	Pneumonia.....	5,123	5,367	26.2	26.8
B32	500-502	Bronchitis.....	1,186	1,354	6.1	6.8
B33	540, 541	Ulcer of stomach and duodenum.....	946	973	4.8	4.9
B34	550-553	Appendicitis.....	128	123	0.7	0.6
B35	560, 561, 570	Intestinal obstruction and hernia.....	945	947	4.8	4.7
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhoea of the newborn.....	712	718	3.6	3.6
B37	581	Cirrhosis of liver.....	1,248	1,847	6.4	6.7
B38	590-594	Nephritis and nephrosis.....	1,139	1,128	5.8	5.6
B39	610	Hyperplasia of prostate.....	437	389	4.4 ¹	3.9 ¹
B40	640-652, 660, 670-689	Complications of pregnancy, childbirth and the puerperium.....	135	135	32.3 ²	34.8 ²
B41	750-759	Congenital malformations.....	2,388	2,304	12.2	11.5
B42	760-762	Birth injuries, postnatal asphyxia and atelectasis.....	2,079	1,859	10.6	9.3
B43	763-768	Infections of the newborn.....	350	319	1.8	1.6
B44	769-776	Other diseases peculiar to early infancy and immaturity (unqualified).....	3,252	2,964	16.6	14.8
B45	780-795	Senility without mention of psychosis, ill-defined and unknown causes.....	987	950	5.0	4.7
B46	Residual	All other diseases.....	12,901	13,090	65.9	65.4
BE47	E810-E835	Motor vehicle accidents.....	5,049	5,410	25.8	27.0
BE48	E800-E802	All other accidents.....	5,929	6,064	30.3	30.3
BE49	E840-E962	Suicide.....	1,715	1,715	8.8	8.6
BE50	E963, E970-E979	Homicide and operations of war.....	264	257	1.3	1.3
	E964, E965					
	E980-E999					
Totals, All Causes.....			148,939	149,863	761.0	748.8

¹ Per 100,000 males.² Per 100,000 live births.

Accidents have displaced infectious diseases in recent years as one of the major killers. Table 18 shows clearly that accidents are, by far, the leading cause of death among males from age one to 44 and one of the five major causes above that age. Although less predominant among females, accidents are also one of the leading causes of female death beyond the first year of life.

18.—Leading Causes of Death, by Sex at Various Age Groups, 1966

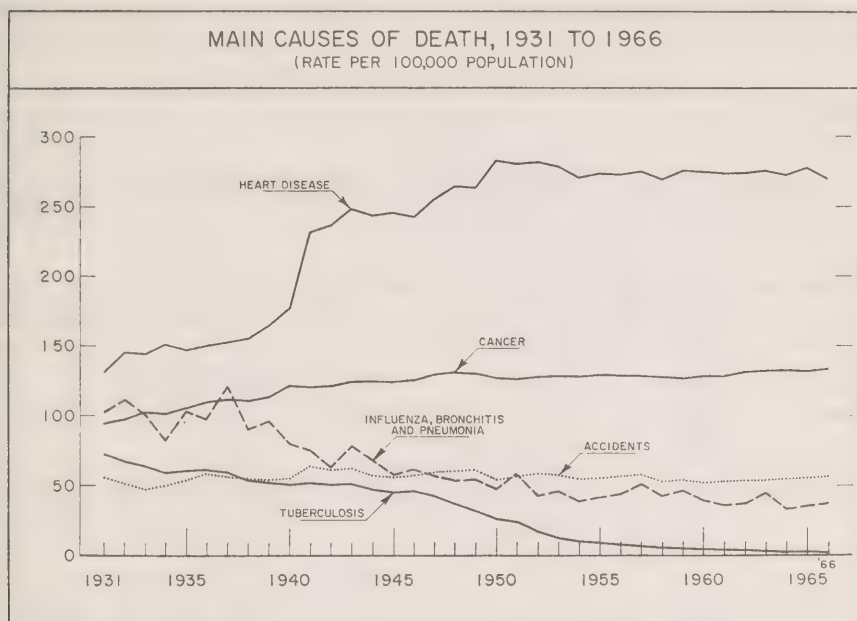
(Rates per 100,000 population)

Cause	Males		Cause	Females		Cause	Both sexes	
	No.	Rate		No.	Rate		No.	Rate
UNDER 1 YEAR ¹								
Congenital malformations.....	911	458	Congenital malformations.....	814	431	Congenital malformations.....	1,725	445
Immaturity.....	906	455	Immaturity.....	736	390	Immaturity.....	1,642	424
Influenza, bronchitis, pneumonia.....	630	317	Influenza, bronchitis, pneumonia.....	421	223	Influenza, bronchitis, pneumonia.....	1,051	271
Postnatal asphyxia and atelectasis.....	602	303	Postnatal asphyxia and atelectasis.....	364	193	Postnatal asphyxia and atelectasis.....	966	249
Injury at birth.....	529	266	Injury at birth.....	364	193	Injury at birth.....	893	230
1-4 YEARS								
Accidents.....	436	47	Accidents.....	270	31	Accidents.....	706	39
Congenital malformations.....	111	12	Influenza, bronchitis, pneumonia.....	95	11	Influenza, bronchitis, pneumonia.....	205	11
Influenza, bronchitis, pneumonia.....	110	12	Congenital malformations.....	81	10	Congenital malformations.....	202	11
Cancer.....	95	10	Cancer.....	84	10	Cancer.....	179	10
Gastritis, duodenitis, enteritis, colitis.....	27	3	Gastritis, duodenitis, enteritis, colitis.....	28	3	Gastritis, duodenitis, enteritis, colitis.....	55	3
5-19 YEARS								
Accidents.....	1,685	53	Accidents.....	634	21	Accidents.....	2,319	37
Cancer.....	249	8	Cancer.....	168	5	Cancer.....	417	7
Congenital malformations.....	75	2	Influenza, bronchitis, pneumonia.....	72	2	Congenital malformations.....	145	2
Suicide.....	74	2	Congenital malformations.....	70	2	Influenza, bronchitis, pneumonia.....	134	2
Influenza, bronchitis, pneumonia.....	62	2	Cardiovascular diseases.....	38	1	Suicide.....	87	1
20-44 YEARS								
Accidents.....	3,070	94	Cancer.....	1,075	33	Accidents.....	3,676	57
Cardiovascular diseases.....	1,452	45	Accidents.....	606	19	Cardiovascular diseases.....	1,997	31
Cancer.....	793	24	Cardiovascular diseases.....	545	17	Cancer.....	1,868	29
Suicide.....	543	17	Suicide.....	187	6	Suicide.....	730	11
Cirrhosis of liver.....	125	4	Maternal causes.....	127	4	Influenza, bronchitis, pneumonia.....	248	4
			Influenza, bronchitis, pneumonia.....	127	4			

¹ Per 100,000 live births.

18.—Leading Causes of Death, by Sex at Various Age Groups, 1966—concluded

Cause	Males		Cause	Females		Cause	Both sexes	
	No.	Rate		No.	Rate		No.	Rate
45-64 YEARS								
Cardiovascular diseases.....	11,654	653	Cardiovascular diseases.....	4,326	244	Cardiovascular diseases.....	15,980	449
Cancer.....	4,906	275	Cancer.....	4,229	238	Cancer.....	9,135	257
Accidents.....	1,586	89	Accidents.....	500	28	Accidents.....	2,086	59
Influenza, bronchitis, pneumonia.....	618	35	Diabetes mellitus.....	310	17	Influenza, bronchitis, pneumonia.....	880	24
Suicide.....	485	27	Influenza, bronchitis, pneumonia.....	242	14	Cirrhosis of liver.....	696	20
65 YEARS OR OVER								
Cardiovascular diseases.....	30,252	4,222	Cardiovascular diseases.....	26,942	3,274	Cardiovascular diseases.....	57,194	3,715
Cancer.....	8,942	1,248	Cancer.....	6,285	764	Cancer.....	15,227	989
Influenza, bronchitis, pneumonia.....	3,007	432	Influenza, bronchitis, pneumonia.....	1,967	229	Influenza, bronchitis, pneumonia.....	5,004	329
Accidents.....	1,268	177	Diabetes mellitus.....	1,053	128	Accidents.....	2,251	146
Diabetes mellitus.....	776	108	Accidents.....	983	119	Diabetes mellitus.....	1,829	119
ALL AGES								
Cardiovascular diseases.....	43,413	432	Cardiovascular diseases.....	31,866	320	Cardiovascular diseases.....	75,279	376
Cancer.....	14,906	149	Cancer.....	11,852	119	Cancer.....	26,848	134
Accidents.....	8,300	83	Accidents.....	3,165	32	Accidents.....	11,474	57
Influenza, bronchitis, pneumonia.....	4,472	44	Influenza, bronchitis, pneumonia.....	2,847	20	Influenza, bronchitis, pneumonia.....	7,319	37
Diseases of early infancy.....	3,038	30	Diseases of early infancy.....	2,104	21	Diseases of early infancy.....	5,142	26



Subsection 2.—Infant Mortality

Table 1, pp. 224-225, and Table 19 show the striking improvement that has taken place in the rate of infant mortality during the past 25 years. Although 63,353 of the 2,565,574 children born in the six years 1962-67 died before reaching their first birthday, 177,554 others lived who *would have died* at the infant mortality rate prevailing in the period 1926-30. This improvement is attributable to many factors—the higher proportion of births taking place in hospital or under proper prenatal and postnatal care, better supervision of water supplies, improved sanitation, pasteurization of milk, the use of antibiotics, improved home environment as a result of higher living standards and, in recent years, the generally lower age of mothers.

The variations that exist in infant mortality rates from province to province and from one locality to another may be explained by differences in the extent to which these factors apply provincially or locally. Among the provinces, the 1967 male infant mortality rates ranged from a low of 21.0 to a high of 33.0, compared with the national average of 24.2—the latter including the very high rate among the Northwest Territories aboriginal population. Female rates ranged from 17.3 to 24.1, compared with the national rate of 19.6. Although the national and provincial rates for both sexes have been declining steadily for some years, for some unknown reason there were recently a number of reversals in provincial rates.

Table 19 shows that mortality among male infants is 25 p.c. to 30 p.c. higher than that among female infants for Canada, with wider variations for the individual provinces. For the country as a whole, out of every 1,000 infant boys born alive in 1967, 24 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 20 died within one year. As already pointed out, there are on the average 1,056 males born to every 1,000 females but, because male infant mortality is higher, the excess of males is reduced greatly by the end of the first year. For example, in 1962-67 there were 1,316,279 male children born compared with 1,249,295 female children, an excess of 66,984 or 5.4 p.c.:

in the same period, 36,290 male children died during their first year compared with 27,063 female children so that the excess of males at one year of age was reduced to 57,757 or 4.7 p.c.

19.—Distribution of Infant Deaths by Province and Sex, 1941-67

Province and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Province or Territory and Year	Males	Fe- males	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.				No.	No.		
Newfoundland.....1951	361	276	60.3	48.0	Manitoba—concl...1965	256	204	24.9	21.0
1961	335	253	41.7	33.5	1966	231	152	25.1	17.3
1965	236	223	31.2	31.1	1967	211	160	24.0	19.0
1966	237	168	32.8	23.0	Saskatchewan.....1941	531	415	56.1	46.2
1967	214	153	33.0	24.1	1951	353	323	31.8	30.4
P. E. Island.....1941	102	61	94.6	62.8	1961	373	245	30.3	21.0
1951	60	30	43.7	23.5	1965	298	205	28.4	20.5
1961	55	38	37.4	27.8	1966	278	183	28.3	19.9
1965	43	31	33.2	25.4	1967	267	198	28.9	22.6
1966	34	23	29.9	21.7	Alberta.....1941	506	373	57.0	44.3
1967	29	19	27.3	19.3	1951	531	358	38.6	27.0
Nova Scotia.....1941	545	363	77.0	53.2	1961	612	432	30.8	22.7
1951	344	250	38.9	30.2	1965	455	330	26.9	21.0
1961	309	229	31.0	24.3	1966	376	264	24.2	17.6
1965	210	184	25.0	22.7	1967	329	286	21.0	19.1
1966	221	163	28.1	22.1	British Columbia...1941	316	236	41.1	32.1
1967	187	139	25.5	19.9	1951	487	352	33.8	25.8
New Brunswick...1941	515	421	83.1	69.3	1961	534	411	27.1	21.8
1951	472	363	57.6	46.0	1965	403	294	23.6	17.8
1961	248	186	29.1	23.0	1966	440	339	26.5	21.4
1965	177	149	24.4	21.6	1967	398	305	23.6	19.0
1966	163	143	24.9	23.2	Yukon Territory...1951	10	9	57.8	53.3
1967	172	138	27.3	22.8	1961	13	10	45.8	36.5
Quebec.....1941	3,916	2,854	85.3	65.9	1965	10	11	44.2	54.5
1951	3,335	2,486	53.7	42.3	1966	9	11	48.6	59.8
1961	2,464	1,855	34.7	28.0	1967	4	5	20.1	26.9
1965	1,820	1,340	29.3	22.9	Northwest Territories.....1951	43	27	135.6	81.3
1966	1,565	1,211	27.7	22.7	1961	73	51	128.1	93.2
1967	1,303	1,044	25.2	21.0	1965	38	38	60.1	68.0
Ontario.....1941	1,910	1,384	51.3	39.5	1966	44	46	73.8	81.9
1951	2,010	1,535	33.9	27.6	1967	42	33	67.3	56.3
1961	2,090	1,536	25.9	20.0	Canada.....1941 ¹	8,788	6,448	67.0	51.9
1965	1,680	1,227	23.1	17.8	1951	8,375	6,298	42.7	34.0
1966	1,540	1,120	22.8	17.5	1961	7,417	5,493	30.5	23.7
1967	1,446	1,069	22.1	17.3	1965	5,626	4,236	26.2	20.8
Manitoba.....1941	447	341	58.7	47.4	1966	5,138	3,822	25.8	20.2
1951	369	289	35.6	30.2	1967	4,692	3,549	24.2	19.6
1961	341	247	28.6	21.7					

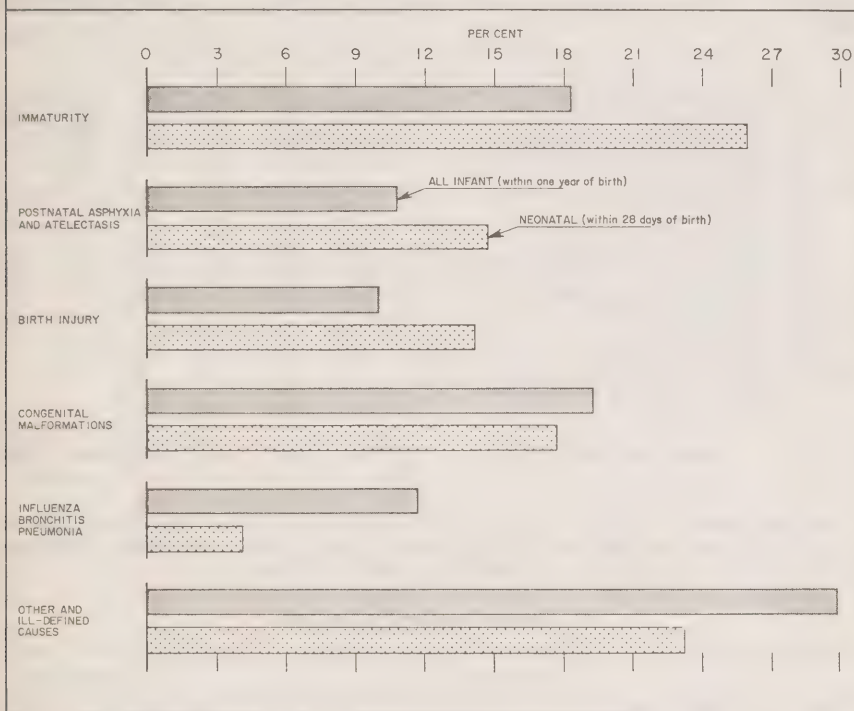
¹ Excludes Newfoundland and the Yukon and Northwest Territories.

Infant Mortality in Urban Centres.—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 226-229, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated, while others have consistently higher rates.

Causes of Infant Deaths.—In 1966 almost 70 p.c. of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 1,642 deaths and an added complication in 2,290 others. Congenital malformations accounted for 1,725 fatalities, pneumonia for 950, postnatal asphyxia and atelectasis for 966 and injury at birth for 893. Rates for all of these causes (except congenital malformations) decreased in 1966.

CAUSES OF INFANT AND NEONATAL DEATHS, 1966

(PERCENTAGES OF TOTAL INFANT AND TOTAL NEONATAL DEATHS)



20.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1964-66

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1964	1965	1966	1964	1965	1966
001-019	Tuberculosis.....	3	4	3	1	1	1
020-029	Syphilis.....	—	1	—	—	—	—
045-048	Dysentery.....	1	—	3	—	—	1
050	Scarlet fever.....	—	—	—	—	—	—
056	Whooping cough.....	15	5	5	3	1	1
057	Meningococcal infections.....	18	18	14	4	4	4
085	Measles.....	23	27	20	5	6	5
140-239	Neoplasms.....	45	31	32	10	7	8
273	Diseases of thymus gland.....	12	11	18	3	3	5
325	Mental deficiency.....	58	48	37	13	11	10
340	Meningitis (non-meningococcal).....	86	73	65	19	17	17
391, 392	Otitis media.....	63	40	53	14	10	14
471-475	Acute upper respiratory infections.....	30	36	28	7	9	7
480-483	Influenza.....	37	35	45	8	8	12
490-496	Pneumonia (4 weeks and over).....	948	831	707	209	199	182
500-502	Bronchitis.....	72	55	56	16	13	14
503	Gastritis and duodenitis.....	2	1	1	—	—	—
550-570	Hernia and intestinal obstruction.....	96	104	93	21	25	24
571	Gastro-enteritis and colitis.....	208	172	170	46	41	44

20.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1964-66—concluded

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1964	1965	1966	1964	1965	1966
572	Chronic enteritis, and ulcerative colitis.....	3	2	3	1	--	1
750-759	Congenital malformations.....	1,969	1,821	1,725	435	435	445
760, 761	Injury at birth.....	1,170	996	893	258	238	230
762	Postnatal asphyxia and atelectasis.....	1,256	1,083	966	277	259	249
763	Pneumonia of newborn (under 4 weeks).....	307	286	243	68	68	63
764	Diarrhoea of newborn (under 4 weeks).....	57	30	25	13	7	6
765-768	Other infections of newborn.....	41	34	51	9	8	13
769	Antenatal toxæmia.....	91	56	45	20	13	12
770	Erythroblastosis.....	251	218	202	55	52	52
771	Hæmorrhagic disease of newborn.....	93	73	66	21	17	17
772	Nutritional maladjustment.....	36	29	14	8	7	4
773	Ill-defined diseases peculiar to early infancy.....	1,077	1,049	995	238	251	257
774-776	Immaturity.....	2,159	1,827	1,642	477	436	424
795	Ill-defined and unknown causes.....	27	10	6	6	2	2
E810-E825	Motor vehicle accidents.....	32	15	26	7	4	7
E900-E904	Accidental falls.....	9	10	19	2	2	5
E916	Accidents caused by fire.....	18	23	18	4	5	5
E921, E922	Inhalation and ingestion of food or other object.....	276	259	241	61	62	62
E924, E925	Accidental mechanical suffocation.....	158	141	97	35	34	25
	Other accidental and violent deaths.....	43	44	49	9	11	13
	Other specified causes.....	379	364	284	84	87	73
	Totals, All Causes.....	11,169	9,862	8,960	2,466	2,356	2,311

Age at Death.—Of the 8,960 infants who died within a year of their birth, 6,253, or almost 70 p.c., were less than one month old—3,657 during the first day of life, 1,918 from the second to the seventh day, and 678 during the three following weeks.

21.—Infant Deaths, by Age, 1966

Time of Death	Number	Per- centage	Cumulative		Time of Death	Number	Per- centage	Cumulative	
			Number	Per- centage				Number	Per- centage
1st day.....	3,657	40.8	3,657	40.8	1st month.....	6,253	69.8	6,253	69.8
2nd ".....	763	8.5	4,420	49.3	2nd ".....	637	7.1	6,890	76.9
3rd ".....	538	6.0	4,958	55.3	3rd ".....	517	5.8	7,407	82.7
4th ".....	263	2.9	5,221	58.3	4th ".....	393	4.4	7,800	87.1
5th ".....	146	1.6	5,367	59.9	5th ".....	289	3.2	8,089	90.3
6th ".....	112	1.2	5,479	61.1	6th ".....	196	2.2	8,285	92.5
7th ".....	96	1.1	5,575	62.2	7th ".....	148	1.7	8,433	94.1
					8th ".....	144	1.6	8,577	95.7
1st week.....	5,575	62.2	5,575	62.2	9th ".....	114	1.3	8,691	97.0
2nd ".....	343	3.8	5,918	66.0	10th ".....	109	1.2	8,800	98.2
3rd ".....	177	2.0	6,095	68.0	11th ".....	94	1.0	8,894	99.3
4th ".....	158	1.8	6,253	69.8	12th ".....	66	0.7	8,960	100.0

Neonatal Mortality.—Deaths occurring within the first four weeks of birth are conventionally referred to as 'neonatal' deaths. Table 21 shows that about 70 p.c. of all infant deaths occur in this hazardous neonatal period and, as would be expected, are caused mainly by conditions associated with pregnancy or delivery. Table 22 gives numbers and rates of neonatal deaths for 1941-67 and the chart on p. 249 compares the major causes of such deaths in 1966 with all infant deaths from the same causes. Although neonatal death rates have been declining steadily since 1941, there has been relatively little reduction during the past five to 10 years and in fact slight increases in some provinces during the past two or three years.

22.—Neonatal Mortality,¹ by Province, 1941-67

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
NUMBERS													
Av. 1941-45....	344	58	418	453	3,329	2,061	425	469	463	400	..	..	8,076
" 1946-50....	346	52	403	527	3,395	2,511	442	505	553	533	..	..	9,052
" 1951-55....	294	45	342	391	3,241	2,476	395	426	552	535	8	30	8,736
" 1956-60....	324	54	334	322	3,137	2,652	402	414	622	648	8	54	8,970
" 1961-65....	299	48	318	261	2,679	2,494	356	389	632	559	10	39	8,085
1965.....	253	49	262	209	2,221	2,142	303	335	557	462	11	31	6,835
1966.....	252	42	256	191	2,013	1,956	249	309	435	506	9	35	6,253
1967.....	235	40	231	205	1,665	1,789	231	309	412	475	5	31	5,628
RATES PER 1,000 LIVE BIRTHS													
Av. 1941-45....	37.0	26.5	27.6	34.7	34.0	26.5	26.8	25.4	24.6	22.6	..	..	29.2
" 1946-50....	28.0	18.2	22.4	31.2	29.4	23.9	22.9	23.1	22.8	20.6	..	..	25.5
" 1951-55....	22.4	16.5	18.7	23.7	25.2	19.2	18.5	18.1	17.8	17.1	19.9	45.0	21.0
" 1956-60....	21.7	20.1	17.5	19.4	22.4	17.4	18.0	17.2	16.8	16.6	15.5	57.1	19.1
" 1961-65....	19.8	17.2	17.2	16.7	20.4	16.3	16.1	17.1	17.1	15.2	20.4	33.4	17.7
1965.....	17.2	19.5	15.9	14.7	18.4	15.1	15.2	16.3	17.1	13.7	25.7	26.0	16.3
1966.....	17.9	19.1	16.8	15.0	18.3	14.8	13.8	16.2	14.2	15.6	24.4	30.2	16.1
1967.....	18.3	19.5	16.1	16.6	16.4	14.0	13.4	17.2	13.4	14.4	13.0	25.6	15.2

¹ Prior to 1951, includes deaths under one calendar month of age; since 1951, includes deaths under 28 days.

Perinatal Mortality.—'Perinatal' mortality—the combined total of stillbirths and deaths of live-born infants occurring 'around' the natal period—is a relatively new vital statistics concept. Since such deaths frequently have the same underlying causes, associated with pregnancy or delivery, regardless of whether they occur before or after delivery, perinatal deaths are generally considered as including the combined total of stillbirths occurring after at least 28 weeks pregnancy and deaths of live-born infants who fail to survive the first week of life.

In 1966 there were 10,004 such 'deaths', of which 4,429 were stillborn and 5,575 live-born but failed to survive one week, with a national rate of 25.5 such deaths for every 1,000 total deliveries. This perinatal rate has declined slowly but steadily from 65.2 in 1921 to 25.5 in 1966.

Subsection 3.—Maternal Mortality

As indicated in Table 1, pp. 224-225, the number of mothers who die as the result of pregnancy or childbirth has been greatly reduced during the past two decades, reaching an all-time low of 88 in 1967 as compared with 135 in 1966 and 1965. Since 1951 the rate of maternal mortality per 10,000 births has been under 10 and since 1959 it has been under five. With this recent improvement, Canada's maternal death rate (2.4 in 1967) is com-

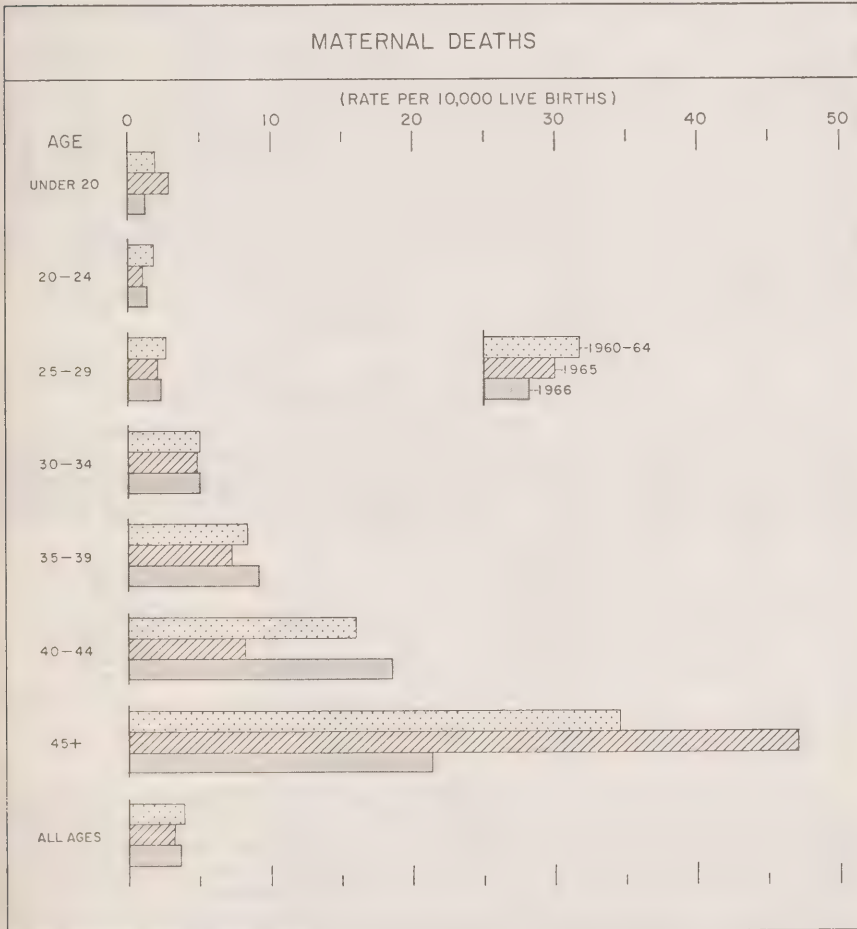
paring more favourably with those of other countries (see p. 265). Mortality among unmarried mothers is higher than among married mothers.

Causes of Maternal Deaths.—Table 23 shows the main causes of maternal deaths during the years 1964-66.

23.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1964-66

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1964	1965	1966	1964	1965	1966
	Complications of Pregnancy.....	35	42	48	8	10	12
640,641	Infections of the genito-urinary tract during pregnancy.....	3	2	—	1	--	—
642	Toxæmias of pregnancy.....	17	21	32	4	5	8
643	Placenta prævia noted before delivery.....	—	1	1	—	--	--
644	Other hæmorrhage of pregnancy.....	—	2	1	—	--	--
645	Ectopic pregnancy.....	6	4	6	1	1	2
646-649	Other complications of pregnancy.....	9	12	8	2	3	2
	Abortion.....	22	14	13	5	3	3
650,652	Abortion without mention of sepsis.....	10	4	4	2	1	1
651	Abortion with sepsis.....	12	10	9	3	2	2
	Complications of Delivery.....	48	43	37	11	10	10
670	Delivery complicated by placenta prævia or antepartum hæmorrhage.....	6	5	8	1	1	2
671	Delivery complicated by retained placenta...	4	5	3	1	1	1
672	Delivery complicated by other postpartum hæmorrhage.....	15	11	10	3	3	3
673,674	Delivery complicated by abnormality of bony pelvis or malposition of foetus.....	5	4	—	1	1	—
675	Delivery complicated by prolonged labour of other origin.....	1	—	2	--	—	1
676,677	Delivery with laceration or other trauma.....	11	13	8	2	3	2
678	Delivery with other complications of child-birth.....	6	5	6	1	1	2
	Complications of the Puerperium.....	32	36	37	7	9	10
680	Puerperal urinary infection without other sepsis	1	—	—	--	—	—
681	Sepsis of childbirth and the puerperium.....	5	7	8	1	2	2
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism.....	13	17	18	3	4	5
685,686	Puerperal eclampsia and toxæmia.....	1	5	4	--	1	1
687-689	Other.....	12	7	7	3	2	2
	Totals, All Puerperal Causes.....	137	135	135	30	32	35

Of the 135 maternal deaths in the latest year, 48 resulted from complications arising during pregnancy, about two thirds of these from some type of toxæmia; 37 resulted from a complication of delivery, 37 from a post-delivery complication and 13 from abortive delivery.



Age at Death.—Table 24 shows the distribution of maternal deaths by age group; the average age at death is about four or five years higher than the average age of all mothers at the time of childbirth. Although death rates for all age groups of mothers have been declining, there have been rather significant changes in the rates. The rate for mothers in the age group 30-34 is twice to three times as high as the rate for the 20-24 group, and increases with the age of the mother.

24. —Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1964-66

(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 10,000 Live Births		
	1964		1965		1966		1964	1965	1966
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years.....	2	1.5	12	9.2	5	3.8	0.5	2.9	1.2
20-24 ".....	21	16.0	14	10.8	17	12.8	1.5	1.1	1.4
25-29 ".....	21	16.0	23	17.7	23	17.3	1.8	2.1	2.3
30-34 ".....	39	29.8	35	26.9	31	23.3	4.8	4.9	5.0
35-39 ".....	30	22.9	30	23.1	33	24.8	6.6	7.3	9.2
40-44 ".....	17	13.0	11	8.5	22	16.5	11.4	8.2	18.6
45-49 ".....	1	0.8	5	3.8	2	1.5	9.3	47.8	21.6
50 years or over.....	—	—	—	—	—	—	—	—	—
Totals, All Ages.....	131	100.0	130	100.0	133	100.0	3.0	3.2	3.6
Average age at death.....yrs.	32.4		31.9		33.0		...	...	...
Median age at death ¹"	32.8		32.3		33.5		...	...	...

¹ The age below and above which half of the maternal deaths occurred.

Section 4.—Natural Increase*

The excess of births over deaths, commonly referred to as 'natural increase', is a very important factor in the growth of a population. Although the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of natural increase in the early Canadian population may be learned from the estimates shown at the beginning of Sections 2 and 3, which resulted in the following natural increase rates:—

Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)	Intercensal Period	Estimated Average Annual Natural Increase Rate (per 1,000 Population)
1851-61.....	23	1891-1901.....	14
1861-71.....	19	1901-11.....	18
1871-81.....	18	1911-21.....	16
1881-91.....	16		

Because of the combination of high birth rates and declining death rates—despite the fact that death rates were still relatively high—the annual rate of natural increase during the late 1800s and early 1900s varied between 11 and 23; in other terms, the population increased at the rate of 1.5 p.c. to 2.5 p.c. each year by natural increase alone, regardless of any increase attributable to immigration. During the 1920s and early 1930s the birth rate declined more than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. But higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Although after that year there has been a steady drop because of declining birth rates, the natural increase rate in 1967 was still high at 10.8.

Table 1, pp. 224-225, gives average rates of natural increase in the provinces for five-year periods 1941-67 and Table 25 gives the provincial figures for males and females separately for 1941, 1951, 1961 and 1965-67. High birth rates and declining death rates have given Newfoundland, Alberta and New Brunswick the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

* For international comparisons, see Section 7, pp. 264-265.

25.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951, 1961 and 1965-67

Province or Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Newfoundland.....1951	8,734	24.2	4,369	23.6	4,365	24.8
1961	12,553	27.5	6,350	27.0	6,203	27.8
1965 ^r	11,510	23.6	5,664	22.7	5,846	24.5
1966	11,012	22.3	5,406	21.4	5,606	23.2
1967	9,727	19.5	4,663	18.3	5,064	20.7
Prince Edward Island.....1941	915	9.6	483	9.8	432	9.4
1951	1,747	17.9	872	17.4	875	18.2
1961	1,860	17.8	925	17.3	935	18.2
1965 ^r	1,481	13.6	688	12.4	793	14.8
1966	1,151	10.6	538	9.8	613	11.4
1967	1,009	9.3	458	8.3	551	10.2
Nova Scotia.....1941	6,989	12.1	3,335	11.3	3,654	13.0
1951	11,313	17.6	5,596	17.2	5,717	18.0
1961	13,247	18.0	6,435	17.2	6,812	18.8
1965 ^r	10,190	13.5	4,825	12.6	5,365	14.3
1966	8,742	11.5	4,122	10.8	4,620	12.3
1967	7,674	10.1	3,490	9.2	4,184	11.1
New Brunswick.....1941	7,088	15.5	3,396	14.5	3,692	16.5
1951	11,202	21.8	5,522	21.3	5,680	22.1
1961	11,895	19.8	5,844	19.3	6,051	20.5
1965 ^r	9,465	15.3	4,491	14.5	4,974	16.3
1966	7,951	12.9	3,789	12.2	4,162	13.6
1967	7,459	12.0	3,451	11.1	4,008	13.0
Quebec.....1941	54,871	16.5	27,561	16.5	27,310	16.5
1951	86,030	21.2	42,961	21.2	43,069	21.2
1961	100,130	19.1	49,741	18.9	50,389	19.2
1965 ^r	82,073	14.4	40,065	14.1	42,008	14.8
1966	71,198	12.3	34,141	11.8	37,057	12.8
1967	62,806	10.7	29,295	10.0	33,511	11.4
Ontario.....1941	33,036	8.7	15,705	8.2	17,331	9.3
1951	70,846	15.4	34,737	15.0	36,109	15.8
1961	106,666	17.1	51,538	16.4	55,128	17.8
1965 ^r	87,264	12.9	41,438	12.2	45,826	13.5
1966	77,771	11.2	36,436	10.5	41,335	11.9
1967	72,631	10.1	33,857	9.5	38,774	10.8
Manitoba.....1941	8,317	11.4	3,834	10.1	4,483	12.7
1951	13,207	17.0	6,388	16.2	6,819	17.9
1961	15,919	17.3	7,445	15.9	8,474	18.7
1965 ^r	12,260	12.7	5,689	11.7	6,571	13.7
1966	10,069	10.5	4,462	9.2	5,607	11.7
1967	9,551	9.9	4,225	8.7	5,326	11.1
Saskatchewan.....1941	12,006	13.4	5,651	11.8	6,355	15.2
1951	15,293	18.4	7,192	16.6	8,101	20.4
1961	16,587	18.2	7,766	16.2	9,121	20.5
1965 ^r	13,077	13.8	5,829	12.0	7,248	15.7
1966	11,610	12.1	5,220	10.7	6,390	13.7
1967	10,552	11.0	4,564	9.3	5,988	12.8
Alberta.....1941	10,923	13.7	5,016	11.8	5,907	16.0
1951	19,836	21.2	9,331	19.0	10,505	23.5
1961	30,051	22.5	14,194	20.6	15,857	24.7
1965 ^r	23,130	15.9	10,946	14.8	12,184	17.2
1966	20,915	14.3	9,547	12.8	11,368	15.9
1967	21,168	14.2	9,787	12.9	11,381	15.6
British Columbia.....1941	6,533	8.0	2,342	5.4	4,191	10.9
1951	16,439	14.1	7,107	11.9	9,332	16.4
1961	24,188	14.9	10,829	13.1	13,359	16.7
1965 ^r	17,885	9.9	7,587	8.3	10,298	11.6
1966	16,212	8.6	6,751	7.1	9,461	10.2
1967	16,729	8.6	7,111	7.2	9,618	10.0
Yukon Territory.....1951	257	28.6	115	20.9	142	39.4
1961	464	31.7	218	26.7	246	38.1
1965 ^r	328	23.5	157	20.4	171	27.1

25.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951, 1961 and 1965-67—concluded

Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Population	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Yukon Territory—concluded.....1966	287	20.0	135	17.3	152	23.1
1967	312	20.8	150	18.3	162	23.8
Northwest Territories.....1951	365	22.8	164	18.2	201	28.7
1961	855	37.2	409	31.9	446	43.8
1965*	993	36.8	525	35.7	468	38.0
1966	929	32.3	468	30.1	461	35.0
1967	993	34.2	496	31.4	497	37.7
Canada.....1941¹	140,678	12.2	67,323	11.4	73,355	13.1
1951	255,269	18.2	124,354	17.5	130,915	18.9
1961	334,715	18.4	161,694	17.5	173,021	19.2
1965*	269,656	13.7	127,904	12.9	141,752	14.5
1966	237,847	11.9	111,015	11.0	126,832	12.7
1967	220,611	10.8	101,547	9.9	119,064	11.7

¹ Excludes Newfoundland and the Yukon and Northwest Territories.

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this in itself tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are greatly reduced.

Natural Increase in Urban Centres.—The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; natural increase for centres of over 20,000 population can be compiled from the birth and death figures given in Table 2, pp. 226-229.

Section 5.—Marriages and Divorces

Subsection 1.—Marriages*

In 1967 record numbers of marriages were solemnized in Canada (165,879) and in virtually every province mainly because of the postwar babies now reaching 'marriageable' age. The crude marriage rate was 8.1 per 1,000 population and provincial rates varied from 7.4 per 1,000 population for Prince Edward Island to 8.8 for New Brunswick.

Table 26 gives the number of marriages and the marriage rates for Canada and the provinces for 1941, 1951, 1961 and 1965-67, together with percentages of brides and bridegrooms according to place of birth. For the country as a whole, 83 p.c. of the bridegrooms of 1967 were born in Canada and 68 p.c. in the province in which they were married; 86 p.c. of the brides were born in Canada and 74 p.c. in the province in which they were married. During the postwar years until 1959 an increasing number of marriages were of persons born outside the country, because of the heavy immigration of young persons. However, since 1959 the proportion of foreign-born bridegrooms declined from 19.6 to 17.2 p.c. in 1967 and the proportion of foreign-born brides from 15.9 to 14.2 p.c. There are wide

* For international comparisons, see Section 7, pp. 264-265.

variations in the pattern of intermarriage of foreign-born and native-born persons as between provinces; in the older Atlantic Provinces and in Quebec and Saskatchewan, there is a greater tendency than in the other provinces to marry native Canadians and in these areas both partners are often born in the same province.

26.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951, 1961 and 1965-67

Province and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland.....1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
1961	3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
1965	3,412	7.0 ^r	88.6	96.2	3.3	1.8	8.1	1.9
1966	3,728	7.6	89.2	96.6	4.2	1.7	6.7	1.7
1967	4,021	8.0	90.5	95.4	4.2	2.5	5.3	2.1
Prince Edward Island.....1941	673	7.1	78.8	86.6	15.0	9.4	6.2	4.0
1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
1961	624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
1965	713	6.5 ^r	77.7	87.2	18.5	10.9	3.8	1.8
1966	752	6.9	77.3	89.2	18.5	9.0	4.3	1.7
1967	802	7.4	76.9	88.5	18.7	9.5	4.4	2.0
Nova Scotia.....1941	6,596	11.4	73.2	83.8	16.8	9.5	10.0	6.7
1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
1961	5,292	7.2	75.2	87.3	18.8	8.8	6.0	3.4
1965	5,549	7.3	78.2	88.1	16.7	8.2	5.2	3.8
1966	5,833	7.7	76.8	86.8	17.3	9.5	5.8	3.7
1967	6,189	8.2	76.5	86.5	17.0	9.9	6.5	3.6
New Brunswick.....1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.9
1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
1961	4,504	7.5	75.4	86.3	14.9	7.9	9.7	5.8
1965	4,766	7.7	76.2	85.2	14.5	8.8	9.3	5.9
1966	5,165	8.4	76.2	85.8	14.6	8.8	9.2	5.4
1967	5,452	8.8	76.3	85.6	15.0	9.0	8.7	5.5
Quebec.....1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4.8
1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
1965	40,893	7.2	84.2	87.5	5.7	4.9	10.1	7.6
1966	44,411	7.7	83.9	87.2	5.7	5.0	10.4	7.8
1967	46,275	7.9	83.7	87.1	5.7	5.0	10.6	8.0
Ontario.....1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
1965	51,274	7.6	61.6	66.1	14.2	12.2	24.2	21.6
1966	54,571	7.8	61.0	65.9	14.2	12.0	24.8	22.0
1967	58,377	8.2	60.9	65.8	14.3	12.1	24.9	22.1
Manitoba.....1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
1965	7,012	7.3	69.2	76.5	17.7	13.8	13.1	9.6
1966	7,312	7.6	67.7	75.6	18.2	13.9	14.1	10.4
1967	7,942	8.2	68.3	75.7	18.1	14.1	13.6	10.2
Saskatchewan.....1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
1965	6,806	7.2	78.9	85.0	13.5	9.5	7.6	5.5
1966	6,987	7.3	77.7	85.3	14.6	9.2	7.7	5.6
1967	7,579	7.9	77.2	84.1	15.1	9.9	7.7	6.0
Alberta.....1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
1965	11,209	7.7	57.0	63.3	25.8	22.2	17.2	14.4
1966	11,879	8.1	56.4	64.1	26.2	22.0	17.3	14.0
1967	12,903	8.7	56.0	63.4	26.6	22.8	17.4	13.9

26.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951, 1961 and 1965-67—concluded

Province or Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
British Columbia.....1941	9,769	11.9	35.9	43.5	35.6	37.1	28.5	19.4
1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
1965	13,639	7.6	41.3	50.6	35.0	30.3	23.6	19.1
1966	14,682	7.8	42.0	51.2	34.5	29.0	23.6	19.8
1967	16,026	8.2	41.8	51.5	33.7	28.6	24.5	19.9
Yukon Territory.....1961	128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
1965	108	7.7	12.0	24.1	61.1	55.5	26.9	19.4
1966	94	6.5	16.0	16.0	57.4	69.1	26.6	14.9
1967	133	8.9	11.3	23.3	65.4	60.2	23.3	16.5
Northwest Territories.....1961	145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
1965	138	5.1	47.1	52.2	40.6	37.0	12.3	10.9
1966	182	6.3	51.1	62.6	39.0	29.7	9.9	7.7
1967	180	6.2	47.8	64.4	38.3	29.4	13.9	6.1
Canada ¹.....1941	121,842	10.6	76.8	81.5	11.4	10.1	11.7	8.4
1951	128,230	9.2	70.5	76.5	15.1	12.8	14.5	10.6
1961	128,475	7.0	67.9	74.2	14.3	11.7	17.9	14.1
1965	145,519	7.4	68.7	74.1	14.7	12.1	16.6	13.8
1966	155,596	7.8	68.2	74.1	14.8	11.9	17.0	14.0
1967	165,879	8.1	67.9	73.7	14.9	12.2	17.2	14.2

¹ Newfoundland included from 1951 and the Yukon and Northwest Territories from 1961.

Age and Marital Status of Brides and Bridegrooms.—Table 27 shows that 91.3 p.c. of the brides and 91.4 p.c. of the grooms in 1966 had never previously married, and that 4.4 p.c. of the brides and 3.9 p.c. of the bridegrooms had been widowed. The median age at marriage of bachelors was 23.7 years and that of spinsters 21.2. The median ages of widowers and widows at time of remarriage were 58.4 and 51.7.

27.—Brides and Bridegrooms, by Age and Marital Status, 1966

Age Group	BRIDES							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
12-14 years.....	78	—	—	76	0.1	—	—	—
15-19 ".....	47,560	17	49	47,626	33.5	0.2	0.7	30.6
20-24 ".....	72,058	198	898	73,154	50.7	2.9	13.5	47.0
25-29 ".....	14,337	317	1,474	16,128	10.1	4.6	22.1	10.4
30-34 ".....	3,875	380	1,333	5,588	2.7	5.5	20.0	3.6
35-39 ".....	1,802	534	1,026	3,362	1.3	7.8	15.4	2.2
40-44 ".....	1,019	752	778	2,549	0.7	10.9	11.7	1.6
45-49 ".....	583	924	560	2,067	0.4	13.4	8.4	1.3
50-54 ".....	341	992	306	1,639	0.2	14.4	4.6	1.1
55-59 ".....	199	905	158	1,262	0.1	13.2	2.4	0.8
60-64 ".....	110	732	63	905	0.1	10.6	0.9	0.6
65 years or over.....	91	1,128	18	1,237	0.1	16.4	0.3	0.8
Totals, Stated Ages...	142,051	6,879	6,663	155,593	100.0	100.0	100.0	100.0
Age not stated.....	3	—	—	3	...	...	...	...
Totals, All Ages.....	142,054	6,879	6,663	155,596	91.3	4.4	4.3	100.0
Average ages.....yrs.	22.6	51.0	35.0	24.4	...	...	...	...
Median ages ¹"	21.2	51.7	33.3	21.5	...	...	...	...

¹ The ages below and above which half of the marriages occurred.

27.—Brides and Bridegrooms, by Age and Marital Status, 1966—concluded

Age Group	BRIDEGROOMS							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
15—19 years.....	11,654	2	4	11,660	8.2	--	0.1	7.5
20—24 ".....	80,207	38	308	80,553	56.4	0.6	4.3	51.8
25—29 ".....	33,195	140	1,344	34,679	23.3	2.3	18.6	22.3
30—34 ".....	9,379	211	1,511	11,101	6.6	3.4	21.0	7.1
35—39 ".....	3,848	316	1,278	5,442	2.7	5.2	17.7	3.5
40—44 ".....	1,840	437	978	3,255	1.3	7.1	13.6	2.1
45—49 ".....	888	571	772	2,231	0.6	9.3	10.7	1.4
50—54 ".....	538	740	541	1,819	0.4	12.1	7.5	1.2
55—59 ".....	319	898	275	1,492	0.2	14.7	3.8	1.0
60—64 ".....	201	853	117	1,171	0.1	13.9	1.6	0.8
65 years or over.....	189	1,920	81	2,190	0.1	31.3	1.1	1.4
Totals, Stated Ages.....	142,258	6,126	7,209	155,593	100.0	100.0	100.0	100.0
Age not stated.....	3	—	—	3	...	...	...	...
Totals, All Ages.....	142,261	6,126	7,209	155,596	91.4	3.9	4.6	100.0
Average ages.....yrs.	25.2	56.7	38.3	27.0	...	...	...	...
Median ages ¹"	23.7	58.4	36.7	24.0	...	...	...	...

¹ The ages below and above which half of the marriages occurred.

Religious Denominations of Brides and Bridegrooms.—The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 28 shows the relatively strong influence that religion has on marriage. About 67 p.c. of all marriages are between persons of the same religious denomination; in 1966 among those of Jewish faith it was about 91 p.c.; among Roman Catholics about 85 p.c.; United Church about 55 p.c.; and Eastern Orthodox about 66 p.c. Except for those of the Jewish faith, the proportions of persons of the same faith marrying appears to be declining slightly in recent years.

28.—Marriages by Religious Denominations of Contracting Parties, 1966

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Angli-can	Bap-tist	East-ern Orth-odox	Jew-ish	Luth-eran	Pres-byter-ian	Roman Cath-olic ¹	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Anglican.....	8,245	614	109	15	445	750	3,095	4,201	854	4	18,332	11.8
Baptist.....	683	2,069	17	4	133	210	673	1,016	385	3	5,193	3.3
Eastern Orthodox.....	180	23	1,799	2	81	28	473	251	79	—	2,916	1.9
Jewish.....	33	3	2	1,611	20	4	74	32	32	1	1,812	1.2
Lutheran.....	670	132	64	6	1,794	192	1,004	1,115	391	1	5,369	3.5
Presbyterian.....	914	186	30	3	173	1,645	770	1,230	230	—	5,181	3.3
Roman Catholic ¹	3,046	592	294	40	827	778	63,843	3,769	1,299	19	74,507	47.9
United Church.....	4,197	909	192	18	896	1,145	3,817	16,023	1,312	7	28,516	18.3
Other sects.....	1,188	400	63	34	361	298	1,811	1,776	7,743	3	13,677	8.8
Not stated.....	9	1	1	—	7	2	31	14	5	23	93	...
Totals.....	19,165	4,929	2,571	1,733	4,737	5,052	75,591	29,427	12,330	61	155,596	100.0
P.C. of brides....	12.3	3.2	1.7	1.1	3.0	3.2	48.6	18.9	7.9	...	100.0	67.4 ²

¹ Includes Greek Catholic denomination.

² Percentage of marriages between contracting parties of the same religious denomination.

Subsection 2.—Divorces

Before World War I the number of divorces granted in Canada represented less than one per 1,000 of the yearly number of marriages. After that War, however, there was a definite upward trend; the number advanced to 8,213 in 1947, declined gradually to a post-war low of 5,270 in 1951 and since then has again moved sharply upward; the 1967 preliminary figure of 11,156 was the highest on record.

29.—Dissolutions of Marriage (Divorces), by Province, 1941-67

NOTE.—Figures for individual years from 1900 to 1953 are given in the 1956 Year Book, p. 230, for 1954-61 in the 1965 edition, pp. 263-264, and for 1962-64 in the 1967 edition, p. 271.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
NUMBERS											
Av. 1941-45.....	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946-50.....	..	21	185	245	303	2,839	500	383	724	1,676	6,877
" 1951-55.....	5	10	212	167	327	2,430	356	231	612	1,461	5,811
" 1956-60.....	5	4	227	194	403	2,801	315	247	788	1,514	6,498
" 1961-65.....	5	8	277	199	380	3,342	376	298	1,226	1,592	7,723 ¹
1965.....	3	16	323	237	407	4,087	443	312	1,348	1,961	8,974 ²
1966.....	11	18	406	155	988	4,101	524	321	1,567	2,124	10,239 ³
1967 ^p	11	18	394	292	727	4,341	477	399	1,736	2,734	11,156 ⁴
RATES PER 100,000 POPULATION											
Av. 1941-45.....	..	2.2	15.4	22.4	2.9	35.8	42.0	24.4	54.3	104.8	30.3
" 1946-50.....	..	22.1	29.7	49.3	8.0	66.4	66.8	45.9	84.6	155.8	53.0
" 1951-55.....	1.3	9.8	32.0	31.4	7.6	49.2	44.0	26.9	60.3	116.8	39.1
" 1956-60.....	1.2	4.0	32.0	33.9	8.2	48.4	35.9	27.6	65.3	99.8	38.2
" 1961-65.....	1.0	7.8	36.9	32.7	6.9	51.4	39.8	31.8	87.7	93.3	40.8 ¹
1965.....	0.6	14.7	42.7	38.5	4.0	60.2	45.9	32.8	93.0	109.1	45.7 ²
1966.....	2.2	16.6	53.7	25.1	17.1	58.9	54.4	33.6	107.1	113.4	51.2 ³
1967 ^p	2.2	16.5	52.0	47.1	12.4	60.7	49.5	41.6	116.5	140.4	54.7 ⁴

¹ Includes 17 in Yukon Territory and three in the Northwest Territories.

² Includes 12 in Yukon Territory and six in the Northwest Territories.

³ Includes 21 in Yukon Territory and three in the Northwest Territories.

⁴ Includes 21 in Yukon Territory and six in the Northwest Territories.

Section 6.—Canadian Life Tables

Five official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951, 1956 and 1961. The life table values for 1961 are given in abbreviated form in Table 30.

Life tables give some measure of the health and general conditions of survival of an 'artificial' population in a conventional, standard form. A hypothetical number (100,000) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1961, of 100,000 males born, 3,058 would have died in their first year, according to the mortality rates in effect during the period 1960-62, so that 96,942 would survive to one year of age; 179 would have died in their second year so that 96,763 survived to two years of age, and so on. At 100 years of age only 105 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the number of years which a person on the average might expect to live if the mortality rates in the given years remained constant throughout his lifetime.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late teens to early 30s and from age 50 to 65. For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. As an illustration of the information available from study of the life tables, it may be observed that at the mortality rates given in the 1961 life table (see Table 30) about 12,100 males would have died before reaching age 50 as compared with about 7,600 females; only 57,517 of the original group of 100,000 males would have survived to age 70 as compared with 72,746 females.

30.—Canadian Life Table, 1961

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
				yrs.				yrs.
At birth.....	100,000		.03058	68.35	100,000		.02387	74.17
1 year.....	96,942	3,058	.00185	69.50	97,613	2,387	.00164	74.98
2 years.....	96,763	179	.00114	68.63	97,453	160	.00096	74.11
3 ".....	96,653	110	.00099	67.71	97,359	94	.00071	73.18
4 ".....	96,557	96	.00083	66.78	97,290	69	.00061	72.23
5 ".....	96,477	80	.00073	65.83	97,231	59	.00053	71.27
10 ".....	96,185	292	.00050	61.02	97,035	196	.00029	66.41
15 ".....	95,903	282	.00089	56.20	96,888	147	.00040	61.51
20 ".....	95,348	555	.00153	51.51	96,659	229	.00055	56.65
25 ".....	94,577	771	.00157	46.91	96,378	281	.00064	51.80
30 ".....	93,867	710	.00150	42.24	96,045	333	.00079	46.98
35 ".....	93,109	758	.00193	37.56	95,612	433	.00115	42.18
40 ".....	92,061	1,048	.00282	32.96	94,958	654	.00174	37.45
45 ".....	90,486	1,575	.00465	28.49	93,966	992	.00277	32.82
50 ".....	87,896	2,590	.00772	24.25	92,394	1,572	.00436	28.33
55 ".....	83,797	4,099	.01265	20.30	90,000	2,394	.00675	24.01
60 ".....	77,546	6,251	.01999	16.73	86,387	3,613	.01064	19.90
65 ".....	68,774	8,772	.02972	13.53	80,916	5,471	.01718	16.07
70 ".....	57,517	11,257	.04467	10.67	72,746	8,170	.02774	12.58
75 ".....	43,791	13,726	.06706	8.21	61,052	11,694	.04664	9.48
80 ".....	28,936	14,855	.10091	6.14	45,161	15,891	.07941	6.90
85 ".....	15,271	13,665	.15231	4.46	26,884	18,277	.13118	4.89
90 ".....	5,647	9,624	.22712	3.16	11,262	15,622	.20708	3.39
95 ".....	1,196	4,451	.33123	2.20	2,723	8,539	.31226	2.32
100 ".....	105	1,091	.47051	1.49	278	2,445	.45185	1.56

By 1961, life expectancy *at birth* in Canada had reached a new high point of 68.4 years for males and about 74.2 for females—comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child *at present mortality risks* may, on the average, expect to live an additional 69.5 years and a female almost 75 years, representing for an infant boy a gain of 1.2 years over his expectation at birth and for an infant girl a gain of 0.8 years. The expectation of life of a 15-year-old boy is 56.2 additional years; of a 15-year-old girl 61.5 years. At 25 years of age the expectation is about 46.9 years for men and 51.8 years for women and at age 70, 10.7 years for men and 12.6 years for women.

Table 31 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951, 1956 and 1961. According to these figures, life expectancy at birth for men increased about three quarters of a year between 1956 and 1961 and 1.3 years between 1951 and 1956, compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained one and one quarter years between 1956 and 1961 and 2.1 years between 1951 and 1956, compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1961 a total of 8.4 years was added to male life expectancy and 12.1 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, from 1931 to 1961, 3.5 years were added to the life expectancy of a five-year-old male, 2.5 years to a 20-year-old, about one year to a 40-year-old and about half a year to a 60-year-old as compared with 8.4 years for a newborn male. During this period, life expectancy for a five-year-old female gained 8.1 years, for a 20-year-old 6.9 years, for a 40-year-old 4.4 years and for a 60-year-old two and three quarter years as compared with 12.1 years for a newborn female.

Longevity improved for both sexes, though more so and at all ages for females, but there was only slight improvement for males beyond middle life. Briefly, the rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates were established from about 50 years onward for males and from about 80 years onward for females.

The fact that such a pattern exists is important in interpreting the results of these life tables. The arbitrary population base of 100,000 of each sex in the 1956 tables, for example, was subjected to the mortality rates in effect in 1960-62, and the life expectancy computed as if those death rates at each age were to prevail during their lifetime. Actually the theoretical 200,000 infants born in 1960-62 will most probably have a pattern of survival and life expectancy quite different from that of the present life tables as they will spend most of their lives under conditions of public health and medical care which in all likelihood will be superior to those prevailing in 1960-62.

The improvement in life expectancy, particularly among children and adolescents, was caused mainly by the substantial reduction in recent years in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the past 30 years. As approximately 9 p.c. of deaths in 1960-62 occurred among infants and another 77 p.c. among persons over age 50, any additional improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combating diseases associated with middle and old age, such as cardiovascular-renal conditions and cancer.

31.—Expectation of Life, 1931, 1941, 1951, 1956 and 1961

Age	1931		1941		1951		1956		1961	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth.....	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92	68.35	74.17
1 year.....	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99	69.50	74.98
2 years.....	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15	68.63	74.11
3 ".....	63.84	64.75	64.88	67.38	66.68	70.66	67.31	72.24	67.71	73.18
4 ".....	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31	66.78	72.23
5 ".....	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35	65.83	71.27
10 ".....	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51	61.02	66.41
15 ".....	53.41	54.15	54.06	56.36	55.39	59.19	55.86	60.64	56.20	61.51
20 ".....	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80	51.51	56.65
25 ".....	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97	46.91	51.80
30 ".....	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17	42.24	46.98
35 ".....	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40	37.56	42.18
40 ".....	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69	32.96	37.45
45 ".....	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09	28.49	32.82
50 ".....	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65	24.25	28.33
55 ".....	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38	20.30	24.01
60 ".....	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34	16.73	19.90
65 ".....	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60	13.53	16.07
70 ".....	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17	10.67	12.58
75 ".....	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15	8.21	9.48
80 ".....	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75	6.14	6.90
85 ".....	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97	4.46	4.89
90 ".....	2.97	3.24	2.93	3.13	3.10	3.24	3.07	3.67	3.16	3.39
95 ".....	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74	2.20	2.32
100 ".....	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05	1.49	1.56

Table 32 shows provincial or regional life expectancy for males and females at selected ages. According to the 1961 figures, male life expectancy at birth continues to be below 70 and that for females above 72 in all of the five regions. During the period 1931-61, life expectancy at birth for males increased from 60.00 to 68.35, or 8.35 years, varying from 6.32 years for the Prairie Provinces to 11.09 years for Quebec; life expectancy at birth for females rose from 62.10 to 74.17, or 12.07 years, varying from 10.08 years for British Columbia to 14.97 years for Quebec. Quebec showed the greatest improvement of any region among young males and females and middle-aged females, and British Columbia recorded the greatest improvement among middle-aged males.

32.—Expectation of Life at Selected Ages, by Province or Region, 1931, 1941, 1951, 1956 and 1961

Province or Region and Age	1931		1941		1951		1956		1961	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
Atlantic Provinces—¹										
At birth.....	60.20	61.91	61.69	64.63	66.57	70.50	67.91	72.89	68.58	73.92
1 year.....	64.76	65.44	65.68	67.78	69.08	72.41	69.68	74.23	70.06	75.10
20 years.....	49.22	49.62	49.36	51.33	51.59	54.52	51.95	56.01	52.17	56.82
40 years.....	32.73	33.70	32.22	34.19	33.48	35.99	33.58	37.03	33.76	37.70
65 years.....	13.63	14.59	13.13	14.50	13.90	15.42	13.95	15.91	14.16	16.35
Quebec—										
At birth.....	56.19	57.80	60.18	63.07	64.42	68.58	66.13	71.02	67.28	72.77
1 year.....	62.45	62.62	64.45	66.28	67.19	70.71	68.11	72.56	68.71	73.80
20 years.....	47.77	47.73	48.38	49.85	49.76	52.92	50.36	54.43	50.82	55.54
40 years.....	31.04	31.75	30.94	32.72	31.54	34.36	31.91	35.42	32.29	36.38
65 years.....	12.60	13.15	12.44	13.41	12.81	14.17	12.88	14.73	13.16	15.27
Ontario—										
At birth.....	61.30	63.92	64.55	68.43	66.87	71.85	67.80	73.57	68.32	74.40
1 year.....	65.05	66.84	66.74	70.07	68.34	72.91	68.76	74.25	69.14	74.95
20 years.....	48.79	50.13	49.57	52.40	50.58	54.76	50.81	55.95	51.03	56.53
40 years.....	31.56	32.90	31.54	34.11	32.03	35.75	32.24	36.74	32.35	37.27
65 years.....	12.67	13.47	12.63	14.03	13.07	14.92	12.97	15.56	13.05	15.90
Prairie Provinces—										
At birth.....	63.47	65.49	65.43	68.19	68.36	72.28	69.26	74.18	69.79	75.66
1 year.....	67.24	68.30	68.02	70.22	69.90	73.43	70.48	75.06	70.96	76.40
20 years.....	50.98	51.68	51.28	53.08	52.24	55.53	52.55	56.88	52.90	58.08
40 years.....	33.34	34.35	33.32	34.96	33.86	36.63	34.12	37.71	34.37	38.83
65 years.....	13.60	14.40	13.35	14.62	13.88	15.51	14.01	16.20	14.22	17.00
British Columbia—										
At birth.....	62.15	65.34	63.65	68.96	66.73	72.37	68.14	73.91	68.94	75.42
1 year.....	64.55	67.16	65.40	70.17	67.97	73.32	69.19	74.68	69.83	76.00
20 years.....	48.68	51.18	48.99	53.09	50.41	55.51	51.32	56.52	51.85	57.61
40 years.....	32.17	34.27	31.70	35.14	32.45	36.72	33.11	37.49	33.56	38.46
65 years.....	13.36	14.60	12.96	14.83	13.50	15.86	13.72	16.15	13.98	16.94

¹ Figures for 1931 and 1941 are exclusive of Newfoundland.

Section 7.—International Comparisons of Vital Statistics

Table 33 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by three countries—Japan, Venezuela and Union of Soviet Socialist Republics—and that some of the provinces have lower rates than most other countries. The birth rate also helps to give Canada one of the fastest growing populations, currently ranking thirteenth among those listed. However, 11 countries reported lower rates of infant mortality, notably Sweden, Finland and the Netherlands—12.6, 14.4 and 14.7, respectively, as compared with Canada's rate of 23.1.

33.—Principal Vital Statistics Rates of Selected Countries, 1966

NOTE.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.

Source: United Nations publications.

Country or Province	Births		Deaths		Infant Mortality		Neonatal Mortality ¹		Maternal Mortality		Marriages		Natural Increase	
	Rate ²	Rank	Rate ³	Rank	Rate ³	Rank	Rate ³	Rank	Rate ⁴	Rank	Rate ⁵	Rank	Rate ²	Rank
Australia.....	19.3	14	9.0	11	18.2	8	13.2 ⁸	7	3.3 ⁶	14	8.3	9	10.3	15
Austria.....	17.6	24	12.5	30	28.1	21	20.6	20	4.2 ⁶	16	7.6	17	5.1	29
Belgium.....	15.8	28	12.0	27	25.5	15	17.16 ⁶	15	3.0 ⁶	12	7.2	22	3.8	30
Canada	19.4	13	7.5	4	23.1	12	16.1	13	3.5	15	7.8	15	11.9	10
Newfoundland.....	28.5	...	6.2	...	28.0	...	17.9	...	1.4	...	7.6	...	22.3	...
Prince Edward Island.....	20.3	...	9.7	...	25.9	...	19.1	...	9.1	...	6.9	...	11.6	...
Nova Scotia.....	20.1	...	8.6	...	25.2	...	16.8	...	1.3	...	7.7	...	10.5	...
New Brunswick.....	20.6	...	7.7	...	24.1	...	15.0	...	3.1	...	8.4	...	12.9	...
Quebec.....	19.0	...	6.7	...	25.3	...	18.3	...	5.3	...	7.7	...	12.3	...
Ontario.....	19.0	...	6.8	...	20.2	...	14.8	...	2.7	...	7.8	...	11.2	...
Manitoba.....	18.7	...	8.2	...	21.3	...	13.8	...	1.1	...	7.6	...	10.5	...
Saskatchewan.....	19.9	...	7.8	...	24.2	...	16.2	...	4.7	...	7.3	...	12.1	...
Alberta.....	20.9	...	6.6	...	20.9	...	14.2	...	2.0	...	8.1	...	14.3	...
British Columbia.....	17.3	...	8.7	...	21.0	...	15.6	...	4.0	...	7.8	...	8.6	...
Yukon Territory.....	25.7	...	5.7	...	54.2	...	24.4	...	—	...	6.5	...	20.0	...
Northwest Territories.....	40.3	...	8.0	...	77.7	...	30.2	...	8.6	...	6.3	...	32.3	...
Chile.....	32.0 ⁸	3	10.7 ⁸	21	107.1 ⁶	30	37.8 ⁸	27	26.2 ⁶	27	7.6 ⁵	17	21.3 ⁶	4
Denmark.....	18.4	18	10.3	20	16.9	4	14.3 ⁶	9	1.4 ⁶	1	8.3	19	8.1	21
England and Wales.....	17.7	23	11.7	26	19.0	9	12.9	6	2.6	7	8.0	13	6.0	27
Finland.....	16.7	27	9.4	15	14.4	2	13.6 ⁸	8	2.8 ⁶	11	8.2	11	7.3	22
France.....	17.5	25	10.7	21	21.8	11	15.1	11	3.2 ⁶	13	6.9	25	6.8	24
Germany, Federal Republic of.....	17.8	22	11.3	25	23.6	15	18.1	18	6.9 ⁸	19	8.0	13	6.5	25
India ⁷	20.8 ⁸	11	8.2 ⁶	7	72.8 ⁶	29	16.4	14	2.9	10	5.8	27	12.6 ⁶	7
Ireland.....	21.6	9	12.1	28	24.9	16	16.4	14	2.9	10	5.8	27	9.5	16
Italy.....	18.9	16	9.5	16	34.3	23	21.9 ⁶	21	8.1 ⁶	21	7.4	19	9.4	17
Japan.....	13.7	30	6.8	1	19.3	10	12.0	33	8.6 ⁸	23	9.5	2	6.9	23
Mexico.....	44.3	1	9.6	18	60.7 ⁶	25	22.9 ⁶	22	16.8 ⁶	26	7.0	24	34.7	2
Netherlands.....	19.2	15	8.1	6	14.7	3	11.2	2	2.9 ⁶	10	9.0	4	11.1	13
New Zealand.....	22.5	6	8.9	10	17.7	7	12.1 ⁶	4	2.2 ⁶	5	8.6	6	13.6	5
Northern Ireland.....	22.5	6	11.1	13	25.6	18	17.0	16	1.8	3	7.3	20	11.4	11
Norway.....	17.5 ⁸	25	9.1 ⁶	24	17.0 ⁶	8	12.1 ⁶	12	1.8 ⁶	3	6.8 ⁶	26	8.4 ⁸	20
Peru.....	30.1	4	8.4	8	65.7	28	35.3 ⁸	24	8.5 ⁶	22	4.1	29	21.7	3
Portugal.....	22.3	8	10.9	23	64.7	27	25.4 ⁸	24	2.5	12	8.4	8	11.4	11
Scotland.....	18.6	17	12.3	29	23.2	13	15.2	12	6.0 ⁶	18	7.2	12	6.3	26
Spain.....	20.9	10	8.6	9	26.7 ⁶	20	15.2	12	1.4 ⁶	1	7.8	15	5.8	28
Sweden.....	15.8	28	10.0	19	12.6	6	10.3	1	1.4 ⁶	1	7.3	16	9.0	18
Switzerland.....	18.3	20	9.3	14	17.2	2	14.3 ⁶	9	5.8 ⁶	17	7.8	15	13.6 ⁶	8
South Africa (Whites).....	22.6 ⁸	5	9.0 ⁶	11	33.6 ⁶	19	18.5 ¹¹	19	6.9 ¹¹	19	9.7 ⁶	1	10.9	14
Union of Soviet Socialist Republics.....	18.2	21	7.3	3	26.5	22	17.0	16	2.7	9	8.9	5	10.9	14
United States.....	18.4	18	9.5	16	23.4	14	24.9 ⁶	23	9.7	24	9.4	3	8.9	19
Venezuela.....	43.5 ⁸	2	7.1 ⁶	2	47.7 ⁶	24	31.0 ⁸	25	12.3 ⁶	25	5.7 ⁶	28	36.4 ⁸	1
Yugoslavia.....	20.2	12	8.0	5	61.3	26	31.0 ⁸	25	12.3 ⁶	25	8.5	7	12.2	9

¹ Under 28 days unless otherwise stated.² Per 1,000 population.³ Per 1,000 live births.⁴ Per 10,000 live births.⁵ 1965.⁶ 1964.⁷ Registration area only.⁸ 1960.⁹ Excluding children born alive but dead before registration of their birth.¹⁰ 1962.

CHAPTER VI.—HEALTH, WELFARE AND SOCIAL SECURITY*

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.*

In recent years many problems in the planning of health and welfare services have become intensified and emphasis has shifted toward new approaches and new programs. General prosperity, growing urbanization and industrialization, larger numbers of children and older persons in the population, and new concepts and knowledge in health and welfare matters have all contributed to needs for additional and revised services. A number of important developments took place in 1968.

* Except where otherwise indicated, this Chapter was prepared (November 1968) by the Research and Statistics Directorate of the Department of National Health and Welfare, Ottawa.

Of significance was the calling of the first International Conference of Ministers Responsible for Social Welfare, held in New York in September under United Nations auspices. Canada's Minister of National Health and Welfare joined representatives of 93 other nations to ensure, in his words, "that the human and material resources of a country are effectively mobilized and developed to deal successfully with the social requirements of change". Included in the Canadian delegation to the Conference were the Minister of Health and Welfare for New Brunswick, the Minister of Welfare for Manitoba, the Minister of Welfare for Saskatchewan and the Deputy Minister of Family and Social Welfare for Quebec. Of the four Commissions active during the Conference, the one dealing with "Social Welfare Within the Context of National Development" was chaired by Canada's Deputy Minister of National Welfare.

Another important task undertaken by the Deputy Minister of National Welfare in the course of 1968 was the preparation of a Review of Social Development Programs as the basis of a government assessment of federal measures in this field. Existing programs and alternative options were examined as a part of this internal assessment.

A number of developments in Canada's social security system proved helpful from the viewpoint both of meeting the needs of individual Canadians and of relieving the provinces of costs they have been, or would otherwise be, carrying. One of these developments was the further reduction in the age of eligibility for the Old Age Security pension and the Guaranteed Income Supplement. As of Jan. 1, 1969, the age for qualification was 66 instead of 67. As a consequence, persons over 66 no longer require basic assistance under the shared-cost programs of Old Age Assistance, Blind Persons Allowances and Disabled Persons Allowances, and this meant a further significant saving to the provinces. When the process of reducing the eligibility age was begun in 1966, it was estimated that by the time the process was completed (Jan. 1, 1970) the savings to the provinces over the four-year period would amount to some \$120,000,000.

As for the impact of the Guaranteed Income Supplement program, an indication of what it has meant in terms of reducing the demand for provincial supplementary assistance can be gained from the fact that, as of the end of 1968, 750,000 Old Age Security beneficiaries (i.e., more than one half of the total caseload) were receiving the Supplement, and of this number more than 450,000 were being paid the full amount available. In this connection, the further cost-of-living escalation of benefits, effective Jan. 1, 1969, brought the Old Age Security pension up to \$78.00 a month and the combined maximum of the Old Age Security pension and the Guaranteed Income Supplement payment to \$109.20 a month.

It may also be noted that the Canada and Quebec Pension Plans have begun to make a significant contribution in the field of income maintenance. Benefits for survivors were paid for the first time in February 1968, and by year-end some 11,000 widows and orphans were receiving such benefits under the Canada Pension Plan alone. Many of these recipients would otherwise have had to depend for their basic maintenance on mothers' allowances or general assistance. Similarly, the retirement benefits, now payable at age 66, are increasingly significant. By the end of 1968, more than 37,000 persons were receiving such benefits which, as of January 1969, reached a maximum of \$32.00 a month; the maximum payment for persons retiring at the end of 1969 will be \$12.00 a month.

During 1968, the Canada Assistance Plan completed its second year of operation and there was increasing evidence of its effectiveness not only in bringing together and improving existing public assistance programs but also in integrating child welfare services, providing support for health services to persons in need, extending a wide range of administrative and welfare services, and making provision for Indian welfare and for work activity projects. With coverage under the Plan currently running at approximately 1,000,000 recipients, federal payments for 1969-70 are estimated at close to \$500,000,000.

In August 1968, a Task Force on Sport was appointed by the Minister of National Health and Welfare to study relationships between professional and amateur sport and

between the Federal Government and the national and international sport-governing bodies. It is also to suggest ways in which the Federal Government can improve Canadian athletic competition at home and abroad.

Concerning health, the outstanding event of 1968 was the coming into force of the national Medical Care Act. Effective July 1, agreements came into effect between the Federal Government and the governments of Saskatchewan and British Columbia (see pp. 284-286). Several other provinces were reported planning to sign in 1969.

Because of the considerable growth in health care costs, a Federal-Provincial Committee was set up at a meeting of Ministers of Health of the Federal and Provincial Governments held in November in Ottawa. This Committee is to advise the Ministers concerning ways and means of keeping the cost of health services at a reasonable level. At the same Conference, the Federal Government announced its intention of phasing out certain parts of the General Health Grants Program over a three-year period. It also indicated its plans to cease financial participation in the Hospital Construction Grant in 1970, and to limit expenditure on the Health Resources Fund in 1968-69 to \$37,540,000.

Much attention has been given to the augmentation of Canada's limited physical facilities and manpower resources for the provision of health care. Within the Federal Government, the Health Resources Directorate of the Health and Welfare Department is planning studies to measure needs and enhance the efficiency with which present resources are employed. The provinces have also been conducting studies and have been building health science centres. These centres, integrated complexes for the complete provision of all facets of health care, education and research, are under construction or active planning in major cities across Canada; the Health Resources Fund has made major contributions to them (see p. 270). In October, representatives of the centres and other interested professionals met in Ottawa, under the auspices of the Department of National Health and Welfare, to discuss common problems and exchange ideas.

Other events and circumstances of 1968 with special bearing upon health and social security included:—

The growing problem of the abuse of drugs (narcotics, marijuana, LSD, STP, and modeling glue): The apparent failure of the established mechanisms of law enforcement to significantly curb, or even to slow down, the increase in the misuse of these substances, was leading to heightened concern and to increased demands for re-examination of the approaches made in the past. Two Bills were introduced in the Senate in 1968 to facilitate the control of hazardous substances and restricted drugs and at the year-end were under consideration. Concurrently, the Department set up a Committee to examine the problem of drug abuse and to make recommendations to guide future policy.

Steadily increasing documentation of the harmful effects of smoking upon health: Late in the year, the Department of National Health and Welfare published a listing, by brand-name, of the nicotine and "tar" content of all cigarettes commonly sold in Canada. Four Bills introduced in the House of Commons late in 1968 by private members were referred to Committee and not simply "talked out", as is often the fate of such Bills. Moreover, their consideration by the Committee had the support of the Minister. One of the Bills would prohibit the broadcasting of cigarette commercials, another would extend the Food and Drugs Act to tobacco products, and the others would require warnings of hazards to health to appear on tobacco packages and in printed tobacco advertising.

Water pollution studies: The boards set up in 1965 by the International Joint Commission of Canada and the United States to reduce the pollution of Lake Erie, Lake Ontario and the international section of the St. Lawrence River submitted their second interim report to the governments in August 1968. This report outlined achievements to date, which were considerable, and set out the scope of remaining problems, namely: objection-

able and harmful substances in the water; eutrophication*; thermal pollution; disposal of radioactive wastes; and pesticide runoff from broad tracts of land.

The Department of National Health and Welfare submitted a brief to the Special Senate Committee on Science Policy in November 1968. The brief recommended that the Department's scientific activities be adequately supported, that training and research into scientific administration be stressed, that survey standards be updated and applied, that an explicit science policy be adopted, that a scientific evaluation of educational systems in Canada be undertaken, that a research-information clearing-house be established, that there be a continuing parliamentary committee on science policy, that a continuing Canada Health Survey be established, that social and behavioural science be represented on the Science Council of Canada, that the Federal Government's social research be co-ordinated, that a clearing-house be set up on Canada's international research activities, and that fundamental research be adequately supported.

PART I.—HEALTH

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

Section 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for collection, analysis and publication of national health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Canada Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare is concerned with food and drugs, including narcotics, operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It advises on the medical eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances and also administers disability and rehabilitation benefits under the Canada Pension Plan. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Health counselling and medical supervision are provided for the Federal Public Service. The Department also administers the civil aviation medical program for the Department of Transport.

The Department serves the provinces in an advisory and co-ordinating capacity and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Health Resources Fund and the Hospital Insurance and National Health Grant programs is a major activity. Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of health.

* The enrichment of waters by nutrients, generally causing heavy growth of aquatic vegetation such as algae, which, by decaying, progressively exhaust dissolved oxygen in lower depths. The effect is cumulative; the results are marked and often surprising; and the dynamics are not fully understood.

Subsection 1.—Public Medical Care

The Medical Care Act was passed by the Canadian Parliament in December 1966 and became operative on July 1, 1968. On that date British Columbia and Saskatchewan entered the plan and several other provinces had signified firm intention to enter by Apr. 1, 1969. In accordance with the terms of the Act, the Federal Government contributes to any participating province half of the per capita cost of all insured services furnished under the plans of all participating provinces multiplied by the number of insured persons in that one province. In order to benefit from this federal contribution, a provincial plan must meet the following criteria:—

- (1) the plan must be operated on a non-profit basis by a public authority set up by the provincial government, and subject in respect of its accounts and financial transactions to provincial audit;
- (2) the plan must make available, on uniform terms and conditions to all insurable residents of the province, insured services, which are defined as all medically necessary services rendered by medical practitioners, for whom the provincial law must provide reasonable compensation so as to ensure reasonable access to insured services by insured persons;
- (3) the plan must give entitlement to not less than 90 p.c. of the total number of eligible residents of the province during the first two years and not less than 95 p.c. thereafter;
- (4) for persons normally resident in Canada, the plan does not impose any minimum period of residence, although a waiting period of up to three months for entitlement within a province is permissible if 'portability' is provided for, so that persons retain coverage when temporarily absent from the province or during any waiting period, of not more than three months, for benefits in another province on change of residence.

In addition to the comprehensive physicians' services which must be provided as insured services by participating provinces, the Medical Care Act empowers the government to include any additional health services under terms and conditions that may be specified by the Governor in Council. All insured services must be provided without exclusion because of age, ability to pay or other circumstances.

The Canada Assistance Plan (see pp. 310-311) provides for federal contributions of half of the costs of health care services (as well as income maintenance) that provinces make available to persons establishing eligibility on the basis of financial need.

Subsection 2.—Health Resources Program

The Health Resources Program is concerned with manpower in the health fields necessary for the provision of comprehensive health services to Canadians. Under the program the Federal Government provides capital grants for teaching and research establishments, undertakes studies on health manpower, and offers advice and consultation.

The capital-grant aspect of the program was inaugurated when in July 1966 Parliament passed the Health Resources Fund Act, which was established to develop resources for the training of personnel in order to reduce shortages and to meet the increase in demand that is likely to follow the introduction of medical-care insurance. The Act established a fund of \$500,000,000, available over the period 1966-80. Out of this fund the Government will pay up to 50 p.c. of the cost of planning, construction, purchase, renovation and basic equipment of teaching hospitals, medical schools, training facilities for nurses and other health professionals, and research establishments; the costs of land, interest and residential buildings are excluded. Of the \$500,000,000, \$300,000,000 is available to the provinces in proportion to their populations and \$25,000,000 available to the Atlantic Provinces for joint projects in which all four provinces participate; the remaining \$175,000,000 are yet to be allocated. By Mar. 31, 1968, the Government had approved contributions of \$81,000,000 and paid out \$37,000,000—about two thirds for training facilities and one third for research establishments.

In 1967, the Government called a Medical Manpower Conference, which approved a program of studies of various aspects of the supply, distribution, training and use of professional and technical people in the health services. These health-manpower studies are intended to be undertaken by a team of consultants in the Department.

The Department provides technical and professional advice and consults with officials of provincial governments and other agencies concerned with the development of health resources in Canada, and supports programs to increase the effectiveness of health manpower. These activities are undertaken to ensure the economical and efficient use of the Health Resources Fund.

Subsection 3.—National Health Grant Program

The National Health Grant Program was instituted in 1948 to assist the provinces in extending and improving public health and hospital services. As provincial needs have altered, changes have been made in the amounts and conditions of individual grants. Table 1 shows the utilization of the National Health Grants and changes in their classification since inception, and the current grants, as follows: Professional Training, Hospital Construction, Mental Health, Tuberculosis Control, Public Health Research, General Public Health, Cancer Control, Medical Rehabilitation and Crippled Children, and Child and Maternal Health. During the period 1948-67, the total expenditures under this program were \$717,220,740, representing 81 p.c. of the funds allocated. In 1967-68 utilization reached 92 p.c.

The largest single grant has been in support of hospital construction. Up to Mar. 31, 1967, funds had been approved for the construction of buildings for 126,356 hospital beds and 15,840 bassinets, 24,023 beds for nurses and 916 beds for interns. The second largest grant, the General Public Health Grant, has assisted the provinces in extending local health services to prevent disease and control environmental health hazards. Since 1948 more than 50,000 health personnel have received bursaries for special training and in 1967-68 alone more than 6,000 health workers were employed with the aid of grant funds. Other grants are designated for preventive and treatment services in specific areas, such as mental health, tuberculosis and cancer, improvement of maternity, infant and child care, and the correction and treatment of crippling conditions.

1.—Amounts Allocated and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the Period Ended Mar. 31, 1967, and for the Year Ended Mar. 31, 1968.

Grant	May 14, 1948—Mar. 31, 1967			Year Ended Mar. 31, 1968		
	Amount Allocated ¹	Amount Expended ²	Percentage Expended ³	Amount Allocated ¹	Amount Expended ^{2,4}	Percentage Expended ⁵
	\$	\$		\$	\$	
Crippled Children ⁴	6,207,728	4,431,677	71	—	—	—
Professional Training.....	19,435,373	18,994,271	98	1,991,900	2,103,504	106
Hospital Construction ⁶	271,883,104	250,419,287	92	20,367,320	16,401,662	81
Venereal Disease Control ⁶	5,968,336	5,146,209	86	—	—	—
Mental Health.....	136,845,669	116,614,247	86	8,656,650	8,391,840	97
Tuberculosis Control.....	70,006,429	66,027,849	94	1,923,700	2,296,428	119
Public Health Research.....	23,141,888	20,529,358	88	4,581,370	4,799,107	105
Health Survey ⁷	645,180	540,960	84	—	—	—
General Public Health.....	189,596,069	139,989,207	74	17,076,597	17,675,907	104
Cancer Control.....	64,182,967	46,976,706	73	1,923,700	1,629,076	85
Laboratory and Radiological Services ⁸	47,404,300	14,450,881	30	—	—	—
Medical Rehabilitation ⁹	6,500,000	3,016,750	46	—	—	—
Medical Rehabilitation and Crippled Children ¹⁰	19,381,795	13,543,349	70	2,885,550	1,652,784	57
Child and Maternal Health ¹¹	24,049,794	16,539,989	69	1,923,700	1,550,994	81
Totals.....	885,248,632	717,220,740	81	61,330,487	56,501,302	92

¹ As set out in the Orders in Council authorizing the General Health Grants and Hospital Construction Grants for the years cited. ² Provinces may vary the amounts allocated for individual General Health Grants by transfer of unexpended funds from one Grant to another. ³ Total expenditures for each Grant for all provinces including Quebec's share, which has been paid through tax rebate under the Established Programs (Interim Arrangements) Act, effective 1965-66.

⁴ Merged with the Medical Rehabilitation Grant, Apr. 1, 1960. ⁵ The amounts allocated exclude revotes for unclaimed allocations as from Apr. 1, 1953. ⁶ Absorbed into the General Public Health Grant, Apr. 1, 1960.

⁷ Lapsed in 1953 following the completion of provincial health surveys. ⁸ Introduced in 1953 and absorbed into the General Public Health Grant, Apr. 1, 1960. ⁹ Introduced in 1953 and merged with the Crippled Children Grant, Apr. 1, 1960.

¹⁰ From 1960 only; see footnotes ⁴ and ⁹. ¹¹ Introduced in 1953.

Projects supported by the Public Health Research Grant relate to the prevention of disease, disability or death; epidemiology; hospital administration; community-based health and medical care; operational research; environmental health including sanitation; and the training and utilization of health manpower.

Subsection 4.—Hospital Insurance

Provincial hospital insurance programs, operating in all provinces and territories since 1961, cover 99 p.c. of the population of Canada. The programs were introduced under the Hospital Insurance and Diagnostic Services Act of 1957, by which the Federal Government shares with the provinces the cost of providing specified hospital services to insured patients. Specifically excluded are tuberculosis hospitals and sanatoria, hospitals or institutions for the mentally ill, and institutions providing custodial care, such as nursing homes and homes for the aged. The methods of administering and financing the program in each province and the provision of services above the stipulated minimum required by the Act are left to the choice of the province.

Insured in-patient services must include accommodation, meals, necessary nursing service, diagnostic procedures, pharmaceuticals, the use of operating rooms, case rooms, anaesthetic facilities, and the use of radiotherapy and physiotherapy if available. Similar out-patient services may be included in provincial plans and authorized for contribution under the Act. All provinces include some out-patient services. The provincial plans are administered by the provincial department of health in some provinces and by a separate commission in others. To finance the insurance plans, the provinces use general revenue, sales taxes and premiums in various combinations.* The Federal Government contributes, out of the consolidated revenue fund in respect to each province, 25 p.c. of the per capita cost of in-patient services in Canada and 25 p.c. of the per capita cost of in-patient services in the province, which is then multiplied by the average number of insured people in that province. Thus, the total contribution is about 50 p.c. of the sharable cost for all Canada, but the proportion is higher for provinces where the per capita cost is below average and lower for the other provinces. Contributions for insured out-patient services with respect to each province are paid in the same proportion as the contributions to the cost for in-patients.

During 1966, the Federal Government made the following payments, totalling \$441,119,464: Newfoundland \$14,337,110, Prince Edward Island \$3,027,591, Nova Scotia \$22,656,675, New Brunswick \$18,313,419, Ontario \$219,511,420, Manitoba \$29,028,853, Saskatchewan \$30,584,659, Alberta \$47,572,631, British Columbia \$54,839,222, Yukon Territory \$383,127, and Northwest Territories \$864,727.†

Tables 2 and 3 show data for the hospitals listed in hospital insurance agreements for the year 1966. The 1,293 hospitals had a total of 137,272 beds set up at the end of the year or 6.8 beds per 1,000 population. The rate of patient-days per 1,000 population was 2,004 for Canada and ranged from 1,496 in Newfoundland to 2,320 in Saskatchewan.

Table 4 shows the expenditures of budget review hospitals. They exclude capital costs, but include expenditures for services not covered by hospital insurance plans. The expenditures increased by 15 p.c. over the preceding year to \$1,276,090,000 of which salaries accounted for two thirds. Although budget review hospitals provided only about 88 p.c. of all services, the table shows also the per capita amount of their expenditures. This varies greatly between provinces, mainly because of differences in hospital utilization (patient-days per person per year) and of the amount of care provided for chronic patients.

* Newfoundland, Prince Edward Island, New Brunswick, Quebec and Yukon Territory use general revenue only; Alberta, British Columbia and the Northwest Territories use general revenue and a daily charge at the time of service; Nova Scotia uses general revenue and sales tax; Saskatchewan uses general revenue, premiums and sales tax; and Ontario and Manitoba use general revenue and premiums.

† On Jan. 1, 1965, contributions to Quebec under the Hospital Insurance and Diagnostic Services Act were discontinued and replaced by arrangements under the Established Programs (Interim Arrangements) Act.

2.—Number of Beds in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Population, by Province, as at Dec. 31, 1966

Province	No. of Hospitals	Beds		Province or Territory	No. of Hospitals	Beds	
		Number	Rate ¹			Number	Rate ¹
Newfoundland.....	48	2,978	6.0	Saskatchewan.....	159	7,822	8.2
Prince Edward Island..	9	626	5.7	Alberta.....	152	12,894	8.7
Nova Scotia.....	48	4,838	6.4	British Columbia.....	120	12,442	6.5
New Brunswick.....	40	4,034	6.5	Yukon Territory.....	5	160	10.7
Quebec.....	265	36,701	6.3	Northwest Territories..	29	484	16.7
Ontario.....	316	47,290	6.7				
Manitoba.....	102	7,003	7.2	Canada.....	1,293	137,272	6.8

¹ Per 1,000 population; based on intercensal population as at Dec. 31, 1966.

3.—Total Patient-Days and Insured Patient-Days in Hospitals Listed in Hospital Insurance Agreements, with Rates per 1,000 Population, by Province, 1966

Province or Territory	No. of Hospitals Reporting	Total Patient-Days		Patient-Days Paid For by the Insurance Plan of the Reporting Province	
		Number	Rate ¹	Number	Rate ²
Newfoundland.....	48	737,982	1,496	681,111	1,384
Prince Edward Island.....	9	183,844	1,694	176,291	1,649
Nova Scotia.....	48	1,355,136	1,792	1,213,376	1,645
New Brunswick.....	40	1,199,260	1,944	1,091,314	1,794
Quebec.....	267	10,763,554	1,862	10,113,885	1,754
Ontario.....	311	14,445,301	2,075	13,060,038	1,920
Manitoba.....	101	1,975,573	2,051	1,782,796	1,901
Saskatchewan.....	158	2,216,777	2,320	2,124,079	2,247
Alberta.....	151	3,390,577	2,317	3,154,024	2,170
British Columbia.....	120	3,743,778	1,998	3,309,140	1,778
Yukon Territory.....	5	25,834	1,796	21,642	1,542
Northwest Territories.....	27	63,955	2,225	37,232	1,318
Canada.....	1,285	40,101,571	2,004	36,764,428	1,861

¹ Per 1,000 population; based on the 1966 Census.

² Per 1,000 persons insured under provincial plans.

4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1966

Province or Territory	Salaries and Wages	Medical and Surgical Supplies	Drugs	Food	Other Expenses ¹	Total
AMOUNTS OF EXPENDITURES						
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	12,234	835	1,223	1,779	7,150	23,222
Prince Edward Island.....	2,910	149	197	319	1,318	4,892
Nova Scotia.....	23,989	1,285	1,537	2,358	12,244	41,414
New Brunswick.....	20,821	1,264	1,326	2,042	10,275	35,729
Quebec.....	276,354	11,819	14,325	17,075	81,774	401,347
Ontario.....	300,049	13,831	16,510	20,324	106,328	457,043
Manitoba.....	36,397	1,802	2,389	2,602	12,598	55,787
Saskatchewan.....	38,816	1,884	2,285	2,985	14,219	60,190
Alberta.....	58,422	2,608	3,122	5,452	24,640	94,244
British Columbia.....	67,957	3,276	3,645	4,675	22,008	101,561
Yukon Territory.....	104	8	5	8	51	175
Northwest Territories.....	246	13	18	26	184	487
Canada.....	838,299	38,774	46,581	59,645	292,790	1,276,090

¹ Includes other supplies, electricity, maintenance services, repairs, interest, depreciation, rent, etc.

4.—Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1966—concluded

Province or Territory	Salaries and Wages	Medical and Surgical Supplies	Drugs	Food	Other Expenses ¹	Total
EXPENDITURES PER PATIENT-DAY ²						
	\$	\$	\$	\$	\$	\$
Newfoundland.....	16.91	1.15	1.69	2.46	9.89	32.10
Prince Edward Island.....	15.82	0.81	1.07	1.74	7.17	26.61
Nova Scotia.....	19.70	1.06	1.26	1.94	10.05	34.01
New Brunswick.....	18.83	1.14	1.20	1.85	9.29	32.31
Quebec.....	30.30	1.30	1.57	1.87	8.96	44.00
Ontario.....	23.39	1.08	1.29	1.58	8.29	35.63
Manitoba.....	20.44	1.01	1.34	1.46	7.09	31.34
Saskatchewan.....	19.74	0.96	1.16	1.52	7.22	30.60
Alberta.....	18.62	0.83	1.00	1.74	7.85	30.04
British Columbia.....	21.28	1.02	1.14	1.46	6.90	31.80
Yukon Territory.....	31.39	2.30	1.58	2.28	15.32	52.87
Northwest Territories.....	17.13	0.90	1.23	1.79	12.79	33.84
Canada.....	23.77	1.10	1.32	1.69	8.30	36.18
EXPENDITURES PER CAPITA ³						
	\$	\$	\$	\$	\$	\$
Newfoundland.....	24.80	1.69	2.48	3.60	14.50	47.07
Prince Edward Island.....	26.81	1.37	1.82	2.94	12.14	45.08
Nova Scotia.....	31.73	1.70	2.03	3.12	16.20	54.78
New Brunswick.....	33.76	2.05	2.15	3.31	16.66	57.93
Quebec.....	47.81	2.04	2.48	2.95	14.15	69.43
Ontario.....	43.11	1.99	2.37	2.92	15.27	65.66
Manitoba.....	37.97	1.87	2.48	2.70	13.09	57.93
Saskatchewan.....	40.63	1.97	2.39	3.12	14.89	63.00
Alberta.....	39.93	1.78	2.13	3.73	16.84	64.41
British Columbia.....	36.27	1.75	1.95	2.49	11.74	54.20
Yukon Territory.....	7.21	0.53	0.36	0.52	3.52	12.14
Northwest Territories.....	8.57	0.45	0.61	0.90	6.41	16.94
Canada.....	41.88	1.94	2.33	2.95	14.63	63.76
PERCENTAGE DISTRIBUTION						
Newfoundland.....	52.7	3.6	5.3	7.7	30.8	100.0
Prince Edward Island.....	59.5	3.0	4.0	6.5	26.9	100.0
Nova Scotia.....	57.9	3.1	3.7	5.7	29.6	100.0
New Brunswick.....	58.3	3.5	3.7	5.7	28.8	100.0
Quebec.....	68.8	2.9	3.6	4.3	20.4	100.0
Ontario.....	65.7	3.0	3.6	4.4	23.3	100.0
Manitoba.....	65.2	3.2	4.3	4.7	22.6	100.0
Saskatchewan.....	64.5	3.1	3.8	5.0	23.6	100.0
Alberta.....	62.0	2.8	3.3	5.8	26.1	100.0
British Columbia.....	66.9	3.2	3.6	4.6	21.7	100.0
Yukon Territory.....	59.4	4.4	3.0	4.3	28.9	100.0
Northwest Territories.....	50.6	2.7	3.6	5.3	37.8	100.0
Canada.....	65.7	3.0	3.7	4.7	22.9	100.0

¹ Includes other supplies, electricity, maintenance services, repairs, interest, depreciation, rent, etc.
² Excludes the newborn.

³ Based on the 1966 Census.

² Ex-

Subsection 5.—Food and Drug Control

The provisions of the Food and Drugs Act, administered by the Food and Drug Directorate of the Department of National Health and Welfare, apply to the manufacture, advertising, packaging and sale of foods, drugs, cosmetics and medical devices anywhere in Canada. Wide powers are authorized under this legislation to maintain the safety, purity and quality of food and drug products and to prevent misrepresentation in labelling

and advertising. The Act also specifically prohibits the advertising of any food, drug, cosmetic or medical device as a preventive or cure for a number of serious diseases and also lists drugs that may be sold only on prescription.

Standards of safety and purity are developed through laboratory research and maintained through constant and widespread inspection. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food and the underlying reason. Information on new additives must be submitted for careful review before they are included in the permitted list. Considerable emphasis is placed upon studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard and the effect of new packaging and processing techniques on the bacteria associated with food spoilage is of special concern.

Detailed information on all new drugs must be reviewed by the Directorate to determine compliance with requirements before release for sale is permitted. Drug regulations set standards for drug manufacturing, facilities and controls, and prescribe additional safeguards in the distribution of investigational and new drugs. Drug manufacturing requirements relate to sanitation of facilities, employment of qualified personnel, testing to ensure standards of quality and safety at stated stages of processing, and maintenance of records of testing performance, together with a system of control to enable a complete and rapid recall of any lot or batch of drugs from the market. The controls over clinical trials and marketing of new drugs require detailed information to be submitted to the Directorate concerning the method of manufacture, the tests applied to establish standards of safety and quality, and substantial evidence of the clinical effectiveness of the new drug for the purposes stated. Samples of the final product must also be submitted. Before carrying out clinical trials, a manufacturer also must file complete data on his experience with the drug, including any evidence of adverse side effects, and the qualifications of the persons to be engaged in its investigational use. The Minister may suspend clinical testing based on this evidence if he feels that it is in the public interest to do so; in such case the manufacturer has the right to appeal the decision.

The Food and Drug Directorate administers the Proprietary or Patent Medicine Act, which is concerned with the voluntary registration before marketing and the annual licensing of secret-formula medicines sold under proprietary or trade names.

The Directorate conducts an adverse-drug-reaction reporting program across Canada to recognize and investigate reactions to drugs. The co-operation of the medical, dental, veterinary and pharmaceutical professions is solicited in advising the Directorate of such reactions in private practice. Each manufacturer and distributor of drugs in Canada is required to submit to the Directorate certain information on all the products he is marketing in Canada, other than those registered under the Proprietary or Patent Medicine Act. He must notify the Directorate each time he intends to market another product, make changes in an existing product or withdraw a product from the market. Regulation of the supply and use of narcotic drugs is carried out under the Narcotic Control Act, as revised in 1961. This legislation, administered by the Directorate's Division of Narcotic Control, is designed to ensure that narcotics, while readily available for their proper medical use, are not diverted from that use. The Royal Canadian Mounted Police and other law-enforcement agencies enforce the Act and seek to reduce the illicit traffic.

Subsection 6.—Medical Services

Through its Medical Services Branch, the Department of National Health and Welfare provides several direct and indirect types of medical service, as described in the following paragraphs. "Indirect" services are provided by hiring local services where practicable.

Indians and Eskimos.—Medical and public health services are made available to registered Indians or Eskimos who are not included under provincial arrangements and who are unable to provide for themselves. Much of the service in treatment and health education is rendered to the patients through 34 departmental out-patient clinics and 85 health centres staffed by medical and other public health personnel. In remote areas, the key facility is frequently the departmental nursing station, a combined emergency treatment and public health unit usually having two to four beds under the direction of one or two nurses; 47 of these are operated throughout Canada.

Where practicable, there has been considerable integration of Indians in provincial and municipal health agencies, so that the number of hospitals and other facilities provided specifically for them have been reduced accordingly. At present, the Department maintains 14 hospitals at strategic points and co-operates elsewhere with community, mission or company hospitals. Indians are included under all provincial prepaid insurance plans for hospital care and other forms of medical care. Indian and Eskimo health workers are trained to give instruction in health care and sanitation.

Northern Health.—Because of the special problems in developing health services in the Far North, the Department has been given the responsibility of co-ordinating federal and territorial health care for all residents. In so doing, it undertakes the functions of a health department for the Council of the Northwest Territories and assists the government of the Yukon Territory in the provision of certain health services. Hospital insurance plans are in effect in both territories.

In the Yukon, services for the total population, administered through the Commissioner for the Yukon and provided on a cost-sharing basis with the Department of National Health and Welfare, include complete treatment for tuberculosis, payment for services rendered at the Alberta cancer clinics, mental hospital care through arrangements with the Province of British Columbia, and medical care for indigent patients. Public health nursing services, measures for the control of communicable diseases, and administration of the principal public hospital are primarily the responsibility of the Department.

Similar services are provided in the Northwest Territories with costs shared between the territorial government and the Departments of National Health and Welfare and of Indian Affairs and Northern Development.

Other Medical Services.—Compulsorily prepaid medical, surgical, hospital and other treatment services are provided for crew members of all foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade, and medical, surgical and other treatment prepaid on an elective basis is available to crew members of Canadian fishing vessels. (Canadian seamen obtain their hospital care under the provincial hospital insurance plans.) A medical service is also provided for the Canadian Coast Guard.

All vessels, aircraft and other conveyances and their crews and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, yellow fever, typhus and relapsing fever. Fully organized quarantine stations are located at all major seaports and airports.

The Immigration Medical Service conducts in Canada and other countries the medical examination of all applicants for immigration to Canada and provides treatment for certain classes of persons after arrival in Canada, including immigrants who become ill en route to their destination or while seeking employment.

Health counselling is offered through Medical Services Branch units to federal employees throughout the country. This service is primarily diagnostic and advisory only but emergency treatment may also be given.

Air pilots and other air personnel are routinely examined by the Civil Aviation Medical Assessment Service for physical and mental fitness for the performance of their duties.

The Department is responsible for enforcing hygienic standards on federal property, including ports and terminals, on interprovincial means of transport and on ships and aircraft.

Subsection 7.—Radiation Protection

The Department of National Health and Welfare, as the principal adviser to the Atomic Energy Control Board under the Atomic Energy Control Regulations, reviews all applications for licences to procure radioactive materials and recommends health and safety measures. The Department has developed codes for the safe handling of all radioactive materials and has also developed a comprehensive program to protect the public from harmful radiation that could arise through the uncontrolled use of radioactive materials, X-ray equipment, nuclear reactors and other sources, as well as to meet the general concern about radiation from the testing of nuclear weapons and from medical X-ray procedures. Members of the Department serve on advisory committees to the Atomic Energy Control Board which review the location, design, construction and operation of proposed nuclear reactors and charged-particle accelerators (cyclotrons) and make recommendations on their health and safety aspects.

Although the Federal Government does not have authority to enforce health and safety measures in connection with the use of X-rays, the Department has established a committee to set X-ray safety standards and recommend procedures for use throughout Canada. The committee recommends that the sale of X-ray equipment be subjected to federal control and its installation to provincial control. Some provinces have enacted enabling legislation concerning X-ray equipment and some require registration of operators and equipment.

The Department serves as co-ordinator for federal departments and agencies that could deal with radiation accidents and gives short training courses in radiation protection. Direct protection services are provided to workers. Detection devices that workers wear on their bodies are examined periodically to determine the amount of radiation to which the worker has been exposed. Where there is hazard of ingestion or inhalation of radioactive substances, the worker's breath and urine are analysed and when there is an accident or an accident is suspected the person is examined in the "whole body counter", a device that measures radiation emanating from a living person.

The Department operates laboratories for monitoring and research. Radioactive fall-out is monitored over the whole country as are water, air and food products in the vicinity of nuclear reactors. Research is directed toward improvement of measuring radiation exposure; tracing radioactive fall-out elements through rain to soil, through plant tissue and thence to domestic animals and through the human body; and studying the effect of radiation on tissues, blood and cells in order to explore the relationship between radiation and disease.

Subsection 8.—Medical Research

Federal Government agencies have steadily increased their funds allocated for both intramural and extramural biomedical research to \$44,700,000 in 1967-68; funds designated in the Estimates for these purposes in 1968-69 total \$53,500,000, an increase of over 19.7 p.c. The principal agency engaged in intramural medical research is the Department of National Health and Welfare, which spent \$8,000,000 on research and development studies and related scientific activities in the fields of radiation protection, air pollution, occupational health, environmental health, biochemistry, epidemiology and health services. The Department of Veterans Affairs continued a variety of clinical studies in chronic disease problems, including a psychiatric research program, that amounted to \$357,000 in 1967-68. The National Research Council also conducts intramural investigations of importance to health in radiation biology and the biosciences.

Federal grants supporting the development of biomedical research and research personnel in universities and hospitals are channelled mainly through the Medical Research

Council, although significant outlays are made by other agencies in special fields such as public health, defence and dental research. Moreover, the expansion of research plant is one of the key objectives of the Health Resources Program of the Department of National Health and Welfare.

The Medical Research Council spent \$20,500,000 in 1967-68, of which \$7,759,000 was allocated for annual grants-in-aid, \$4,991,000 for three-year term research projects, \$2,638,000 for equipment grants, \$3,760,000 for research scholarships and fellowships, and \$1,351,000 for other research promotion. Its 1968-69 budget for these programs was increased to \$26,943,000.

Under the Public Health Research Grant, the Department of National Health and Welfare allocated \$4,090,000 in 1967-68 to applied and developmental research projects conducted by universities, hospitals, health departments and other non-profit health organizations; in addition, it gave \$124,000 for physiological research under the Fitness and Amateur Sport Grant, \$152,000 for research and demonstration projects on health aspects of mental retardation, and \$23,000 for smoking-and-health research. It is estimated that \$10,000,000 or 30 p.c. of the Health Resources Fund expenditures in 1967-68 was used to build research facilities as an integral part of this program to expand the training of health personnel at medical and dental schools and affiliated centres.

Other substantial grants in aid of research were made to the universities by the Defence Research Board for studies in arctic medicine and climatic physiology, aviation medicine, radiation protection and treatment, toxicology and other special areas. In 1967-68 this support totalled \$473,000. The remaining extramural program, for dental research administered by the National Research Council's Associate Committee on Dental Research, spent \$419,000 in 1967-68.

The principal voluntary agencies supporting medical research related to their special interests are the National Cancer Institute, the Canadian Arthritis and Rheumatism Society, the Multiple Sclerosis Society, and the Muscular Dystrophy Society. The Interdepartmental Committee on Medical Research provides a forum for the sharing of information and support of medical research to which the voluntary agencies are invited. The Medical Research Council reports to Parliament through the Minister of National Health and Welfare.

Subsection 9.—International Health

Canada actively assists and co-operates with the World Health Organization (WHO) and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Canada's candidacy for re-election to the WHO Executive Board was successful by almost unanimous support at the 21st World Health Assembly. Capital and technical assistance are provided to developing countries through the Colombo Plan and other bilateral aid programs. Health training is provided for a number of persons coming to Canada each year under the various technical co-operation schemes (see pp. 148-151); during 1967, there were 380 trainees in Canada studying in a wide range of health disciplines under the Canadian International Development Agency program but with greatest concentration in undergraduate medicine and in public health.

Canadian experts in health legislation, health administration, nursing and related areas undertook specific assignments abroad during the year and teachers and specialists in a number of clinical fields were provided in response to requests from the developing countries. Capital assistance, primarily through the provision of Cobalt-60 beam therapy units for cancer treatment centres in the Colombo Plan area, was continued. During the year, the Advisory Team on the Viet-Nam Medical Program visited a number of centres in Viet-Nam and made recommendations regarding tuberculosis, rehabilitation, immunization, hospital equipment and other programs, most of which have been or are in the process of being implemented.

To carry out Canada's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and medical care for persons arriving in Canada who require quarantine (see p. 276).

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States as well as with problems caused by air pollution. Other responsibilities include the custody and distribution of biological, vitamin and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961, as well as Canada's representation on the Narcotic Commission of the United Nations.

Subsection 10.—Consultative and Technical Services and Special Programs

The extension of technical and consultative assistance to the provinces is a function of the Health Services Branch and the Health Insurance and Resources Branch of the Department of National Health and Welfare. The following services supply consultation and information, advise on health care projects, co-ordinate activities and planning, and exercise leadership in promoting high standards of service: Child and Maternal Health; Dental Health; Emergency Health; Epidemiology; Health Education; Laboratory of Hygiene; Medical Rehabilitation; Mental Health; Nursing Services; Nutrition; Occupational Health; Radiation Protection; Public Health Engineering; Research Development; Health Grants; Health Resources; Hospital Insurance and Diagnostic Services; Health Facilities Design; Medical Care Insurance and Research and Statistics. In addition, the Information Service of the Department produces and distributes a variety of literature, films and radio programs to inform and educate the public on health subjects.

The Department also conducts a number of specialized services to preserve health that are of national concern. These include: the Emergency Health Services which assist provincial and municipal governments to organize emergency medical, nursing, hospital and public health services (see p. 288); the Laboratory of Hygiene including the Virus Laboratory which serves as the national reference centre for the diagnosis of bacterial and viral diseases of man; and the Radiation Protection Division which is mainly responsible for safety measures to protect Canadian radiation workers (see p. 277). The Environmental Health Centre carries out advisory and research services in occupational health, aerospace medicine and public health engineering, which deal with health problems of interprovincial and international traffic and water resources management. The National Tuberculosis Reference Centre in Ottawa, administered by the Laboratory of Hygiene, was opened in 1968 to establish uniform standards in testing for resistance to anti-tuberculosis drugs.

Section 2.—Provincial and Local Health Services

Provincial governments are mainly responsible for the various health measures undertaken to prevent disease and improve the health standards of the community. These comprise the preventive health services, hospital services, mental health services, treatment services for tuberculosis and other diseases, and special treatment services and care of the chronically ill and disabled. They are usually administered by the provincial health departments or other official agency in co-operation with the hospitals and voluntary health organizations, the health professions and the teaching and research institutions.

Although the pattern of services is similar, provincial health organization, financing and administration vary to some degree. Most health functions are exercised by the provincial health departments but in some provinces certain programs, such as hospital insurance, medical care insurance, tuberculosis control, cancer control or alcoholism

programs, are administered by separate public agencies directly accountable to the Minister of Health. Voluntary organizations also provide specialized health services, often with some support from tax funds in the form of payment for services or support grants.

In general, the provincial health departments carry out over-all planning and direction of public health programs, administer certain specialized health programs, and assist through technical and financial aid the regional or county health units and city health departments that have been delegated responsibility for the basic public health services. In most provinces, the health unit systems, which serve mainly rural areas, are operated either by the province or jointly by the province and the local authority with the local authority having jurisdiction over county, municipality or larger area, while city health departments are administered by municipal or metropolitan boards of health. Several provincial health departments also directly administer health services to northern unorganized territories. The nucleus staff of a local health unit or department usually is composed of a full-time medical officer of health, a number of public health nurses and a public health inspector.

Local official programs to safeguard community health are concerned with environmental sanitation to ensure safe water, milk and foods; prevention and control of infectious diseases through use of vaccines and prophylactics; improvement of maternal and child health and dental health; registration of vital statistics; and health education and counseling. In addition, the larger city health departments have developed specialized services in such areas as mental health, home care, and rehabilitation of the chronically ill and the handicapped. More recently, health units and departments in most provinces have started health screening for chronic conditions and family planning clinics. The city health departments participate to some degree with the provincial authorities in accident prevention and in the health aspects of measures to control air, water and soil pollution.

Provincial health departments support the local programs by health grants and the provision of technical consultant services. Most of the mental and tuberculosis hospitals and clinics are provincially operated, as are treatment services for the venereal diseases, cancer, alcoholism and other specific diseases, and the laboratories that aid both the public health agencies and practising physicians in diagnostic and control procedures. The provincial agencies are primarily responsible for the collection and analysis of vital statistics and the study of the epidemiological and related social and economic conditions that affect health. They also give leadership in such fields as occupational health, nutrition, health education and pollution problems in collaboration with national health agencies. In order to maintain and improve health services, the provincial health departments recruit and train professional and technical personnel for the health fields and support public health research.

Subsection 1.—Public Health Services

Environmental Health.—The control of factors in the environment that are harmful to health is an expanding area of public health. Much of the work in community sanitation involves inspection duties to maintain safe milk, water and food supplies and sanitary conditions in sewerage and waste disposal systems and in public areas such as campsites and swimming pools. Air pollution, water pollution, radiation exposure and the use of pesticides have become major problems, necessitating the co-operative efforts of governments and other agencies in research and in planning effective control measures. Special water authorities in Ontario and Quebec have responsibility for all aspects of public water supply, sewerage systems and stream pollution, and in six other provinces special water agencies exercise similar functions jointly with the health departments. Six provincial health departments have implemented measures to control air pollution.

Occupational Health.—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industrial

management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting standards for health safety and accident prevention on the job. Most provinces maintain environmental health laboratories that study industrial health problems such as the effects of noise and air conditions on workers.

Communicable Disease Control.—The larger provincial health departments have separate divisions of communicable disease control headed by full-time epidemiologists whereas in the smaller provinces this function is combined with one or more community health services. Local health authorities organize immunization clinics for the public against diphtheria, tetanus, poliomyelitis, whooping cough, smallpox and measles. They also engage in case-finding and diagnostic services in co-operation with public health laboratories and private physicians. Special services for tuberculosis and venereal disease are noted on p. 283.

Health Education.—A basic concern of provincial health authorities is to stimulate public interest in important health needs. Most provincial health departments have a division or unit of health education directed by a full-time professional "health educator" which provides education materials to other divisions of the health department, to local health authorities and to voluntary associations. Many educational activities are directed to reducing habits harmful to health, such as cigarette smoking and the excessive use of alcohol and drugs.

Public Health Laboratories.—All provinces maintain a central public health laboratory and usually a number of branch laboratories to assist local health agencies and the medical profession in the protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume.

Maternal and Child Health.—Public health nurses employed by the local health services carry out preventive health services to mothers, newborns and children through clinics, home and hospital visits and school health services. All provincial health departments have established maternal and child health consultant services that co-operate with the public health nursing services. The maternal and child health divisions established in five provinces also undertake studies in maternal and child care, including hospital care, and assist in the training of nursing personnel.

Nutrition.—Provincial health departments and some city health departments employ consultants in nutrition to extend technical guidance and education to health and welfare agencies, nursing homes and other care institutions and hospitals. They provide diet counselling to selected patient groups and conduct nutritional surveys and other research.

Dental Health.—Provincial dental public health programs have been largely preventive but increasing emphasis has recently been given to dental care. Dental clinics conducted by the local health services are very often restricted to pre-school and younger school age groups. A number of provinces send dental teams to remote areas and subsidize resident dentists to practice in areas lacking such services; the four western provinces have dental care schemes of varying coverage for welfare recipients. Other dental health programs are directed to the training of dentists and dental hygienists, the conduct of dental surveys and the extension of water fluoridation.

Subsection 2.—Mental Health Services

Mental health services in Canada are organized as part of provincial health services. Each province employs a director of mental health services, usually a psychiatrist, and one or more consultants in psychiatric nursing, clinical psychology, social work, occupational therapy or special education and also one or more psychiatrists specializing in paediatrics, geriatrics, mental retardation, alcoholism and drug addiction, or other related fields. As public health officers, the mental-health directors are responsible for the development of programs aimed at prevention of mental disease and for the general promotion of mental health, on their own and in co-operation with welfare, education, manpower, labour, and justice departments. As psychiatrists, they are responsible for development and supervision of the various health facilities for the treatment of people who suffer from mental or emotional disorders including disorders of character and behaviour, the mentally retarded, people with damage to the nervous system, alcoholics and drug addicts.

Mental health services differ in detail and stage of development from province to province; all are being extended and improved to take advantage of the best methods of treatment and prevention. The traditional pattern of long-term care of the mentally ill and retarded in large isolated mental hospitals and in hospitals for mentally defectives is giving way to new patterns of care designed to cure the afflicted or, failing that, to provide for them living and working environments that will enable them to lead reasonably normal lives.

The mental hospitals now place less emphasis on custodial care and more on intensive psychiatric treatment. They admit voluntary patients who receive much the same care and treatment as they would receive as patients in a general hospital. Many of those who would not profit from intensive psychiatric treatment—the severely retarded and persons with severe mental deterioration—are supported under welfare auspices in sheltered workshops, nursing homes or foster homes and continue to receive medical care. In addition to the mental hospitals, some special "psychiatric" hospitals provide intensive psychiatric care over short periods and psychiatric units and out-patient psychiatric departments are being established in large general hospitals. Local authorities or provincial health departments operate mental-health clinics in most large cities and travelling clinics visit suburban and rural areas. Psychiatric hospitals and mental-health clinics are establishing more day-care and night-care facilities through which some patients receive part-time hospital care and therapy during the day and go home at night and others go to work during the day and return to hospital in the evening for treatment.

The extension of mental-health services into the community is aimed at preventing severe mental and emotional breakdowns and at reducing the number of people requiring treatment in institutions. Through early diagnosis and treatment in a mental-health clinic or out-patient department of the hospital in the patient's neighbourhood, he may continue to live at home and pursue his normal occupation while receiving treatment.

Special centres are being established for the study and treatment of alcoholism and drug addiction, criminal psychopathy, psychiatric disorders in children, brain injuries and other neurological disorders. In addition, the provinces are amending the pertinent legislation in order to guarantee the rights of the mentally ill, the emotionally disturbed, and the intellectually retarded.

The continuing efforts by provincial health departments to provide more and better mental-health services reflect growing enlightenment about mental health on the part of the medical profession, the general public, and government agencies. Improvement in the care of psychiatric patients has been fostered by activities of voluntary organizations such as the Canadian Mental Health Association and the Canadian Association for the Mentally Retarded; by the professional advice of the Canadian Medical Association and the Canadian Psychiatric Association; by the national health grants and the national welfare grants for new services, professional training, and scientific research; and through the information programs of the Mental Health Division of the Department of National Health and Welfare.

Subsection 3.—Services for Specific Diseases or Disabilities

Tuberculosis.—The number of new active cases of tuberculosis in Canada rose slightly in 1967 to 4,601 or 23 per 100,000 population, while deaths dropped to 658, or a record low rate of 3.2. Provincial health departments, assisted by voluntary agencies, conduct major anti-tuberculosis programs based on intensive case-finding through community tuberculin testing and X-ray surveys, surveys of high-risk groups, hospital admission X-rays, and follow-up of arrested cases. BCG vaccine is used in most provinces to protect certain high-risk groups but only in Quebec and Newfoundland are children routinely immunized. Treatment, including hospital care, drugs and rehabilitation, is free in all provinces. The success of chemotherapy has generally shortened the hospital stay of tuberculosis patients and facilitated out-patient or domiciliary care.

Cancer.—Deaths from cancer in 1966 accounted for 17.9 p.c. of all deaths in Canada, and the standardized cancer death rate increased to 134.1 (151.2 for males and 112.2 for females). Special provincial agencies for cancer control, usually in the health department or a separate cancer institute, carry out cancer detection and treatment, public education, professional training, and research in co-operation with local public health services, physicians and the voluntary cancer societies. Although the provisions are not uniform, all cancer programs provide a range of free diagnostic and treatment services to both out-patients and in-patients financed by the hospital insurance programs or the federal-provincial cancer control grants. Hospital insurance benefits for cancer patients include diagnostic radiology, laboratory tests and radiology. The cancer control programs in Alberta, Saskatchewan and New Brunswick also pay for medical and surgical services; elsewhere, some of these costs are covered under the voluntary and public medical care insurance schemes.

Venereal Diseases.—Because of under-reporting, public health authorities consider the real incidence of syphilis and gonorrhoea to be much higher than the official rates. All health departments administer compulsory, free diagnostic and treatment services at public clinics; in areas lacking such clinics, private physicians are paid to provide free treatment. In addition, each province supplies free drugs to physicians for treating private cases. The local health services carry out case-finding and follow-up, and assist in treatment and health education measures.

Alcoholism.—In all provinces, health departments or other official agencies administer programs for the prevention and control of alcoholism. Although their scope varies, all alcoholism programs engage in public and professional education and conduct studies regarding the nature of alcoholism and related problems. Seven provincial alcoholism programs extend treatment services, mainly for out-patients, but most have established other types of treatment facilities such as in-patient centres, hostels, and special farms or prison centres for chronic offenders. Several provincial alcoholism agencies (Ontario and Quebec) have broadened their programs to include other addictions, and British Columbia supports a narcotic addiction foundation. Because addictions are widely prevalent, the hospitals, mental health services and other public and voluntary health and social agencies are also involved in their diagnosis and treatment.

Other Diseases or Disabilities.—Many services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia have been initiated by voluntary agencies assisted by federal and provincial funds. Today, treatment for specific conditions is available at hospital out-patient clinics and in-patient or day centres, at separate clinics and rehabilitation centres and under home care programs. (See pp. 287-288.)

Subsection 4.—Public Medical Care Insurance and Programs

Provincial Medical Care Plans.—Traditionally, patients have paid directly for personal health care services. For the services of physicians, especially, prepaid insurance has been replacing direct payment. At the end of 1966 about 12,000,000 Canadians, or 60 p.c. of the population, had some voluntary insurance protection against the cost of physicians' services. When plans of all types, private and public, are considered together, the total with some form of protection was about 16,400,000, or 82 p.c. of the population.

Government financing of personal health care has been increasing in two directions concurrently. First, for the indigent, most provincial governments have assured payments to physicians and several, as well, to dentists, pharmacists for prescribed drugs, optometrists and others. Such programs have operated in several provinces for many years and the remaining provinces have recently made similar provisions. Under the Canada Assistance Plan, the cost of the services can be shared by the Government of Canada. Secondly, for the general population, some provincial governments have introduced programs intended to ensure, if necessary by using tax revenue, that all residents can have physicians' services insurance. In Saskatchewan, coverage is compulsory, and no other agency is permitted to compete in the service area covered by the public plan. In British Columbia since 1965 and in Ontario since 1966, public agencies administer optional programs available to individual applicants. In Alberta in 1963 the government established minimum benefits and maximum premiums for existing voluntary insurance plans. In 1967 this arrangement was superseded by a plan similar to those in British Columbia and Ontario. The British Columbia and Alberta schemes cover a comprehensive range of physicians' services and also make provision for other health-care benefits to be included as part of the basic contract or as options at a somewhat higher premium cost. As of mid-1968, the publicly administered plans in Alberta and Ontario continued to emphasize coverage by individual contracts; private voluntary agencies were expected to offer coverage through group contracts. When Saskatchewan entered the national medical care plan on July 1, 1968 (see p. 270), the only change of importance was the broadening of the benefits to include eye refractions by physicians and optometrists. The entry of British Columbia on the same date involved substantial changes in the organization but little change in range of benefits or population coverage. The British Columbia Medical Services Commission became the single "public authority" and a number of non-profit voluntary plans were especially approved as enrolment and claims-paying agencies for it.

In Newfoundland, the population in the Cottage Hospital Districts (i.e., isolated outlying areas) may enrol in a salaried medical service scheme. (Additionally, all children under 16 years of age throughout the province are covered under the Children's Health Service, at no direct charge to their families, for physicians' services in hospital.)

All these plans except the Children's Health Service in Newfoundland use premiums. To ensure that the premium burden upon individuals is not too heavy, Saskatchewan and Newfoundland cover about three quarters of the total cost from general tax revenues. In Ontario, Alberta and British Columbia premiums of the needy, as defined by a simple test of income adequacy, are subsidized from general tax revenues. British Columbia had also used a special taxation-supported fund to help stabilize premium levels.

Saskatchewan.—Since July 1962 Saskatchewan has had a universal-coverage medical care program. The premiums are compulsory, the maximum for a family being \$24 a year. These premiums cover approximately 25 p.c. of the costs of the program. Among the medical services covered are home, office and hospital visits, surgery, obstetrics, psychiatric care outside mental hospitals, anaesthesia, laboratory and radiological services,

preventive medicine, and certain services provided by dentists. There are no waiting periods for benefits and no exclusions for reasons of age or pre-existing health conditions.

Physicians may elect to receive payment in four ways. First, the physician may receive payment directly from the public administering authority of 85 p.c. of the tariffs in the current schedule of fees of the organized profession after deducting the utilization fee, and accept this payment as payment in full. Secondly, patients and physicians may enrol voluntarily with an "approved health agency" that serves as intermediary, with respect to payment, between the public authority and the physicians; here also, the physician receives 85 p.c. of the net tariff as payment in full. Thirdly, a physician may elect to submit his bill directly to the patient who pays him and seeks reimbursement for 85 p.c. of the net approved amount from the public authority; the physician may bill the patient directly for amounts over and above the amount the public authority has paid. Fourthly, patient and physician may, if they agree, settle their accounts privately without involving any public authority or approved health agency.

Originally, payment to the physicians under the plan was 85 p.c. of the tariffs as published. Late in 1967 the percentage paid under the first, second and third payment methods was increased to 95 for office, home and hospital visits. In April 1968, utilization fees of \$1.50 for each office call and \$2.00 for each home and out-patient call payable by the patient to the physician, were introduced. The fee schedule of the medical profession was revised upward in August 1968 and at the same time payment reverted to 85 p.c. but now was calculated from the net amount of the physician's claim after the utilization fee had been deducted.

Alberta.—The Alberta Medical Plan introduced in October 1963 was primarily designed to help residents having poor health or low income to purchase voluntary medical care insurance from approved non-profit and commercial agencies. The plan was financed from personal premiums alone; premiums were subsidized by the government for persons with little or no taxable income. On July 1, 1966, this plan was supplemented by an extended health benefit plan for an additional premium.

On July 1, 1967, these plans were superseded by the Alberta Health Plan, operated by the Department of Health for all residents seeking individual and family enrolment. The new plan is divided into two parts—Basic Health Services and Optional Health Services, the latter being subdivided into Options A, B and C. The Basic Plan covers all services of physicians, with payment of 100 p.c. of the tariff; special dental surgery; limited optometric services; and podiatric and osteopathic services up to \$100 annually. Option A offers additional services not insured under the provincial hospital plan, including daily co-insurance charge in a standard ward (limited to 180 days a year if the patient is in a chronic hospital), differential charge for a semi-private room, certain hospital out-patient charges, and ambulance benefits up to \$100 a year. Option B covers prosthetic appliances and up to 80 p.c. of the cost of prescribed drugs; for prescribed drugs the subscriber pays 20 p.c. or \$1 per prescription, whichever is greater. Purchase and repair of artificial limbs, eyes and braces, prescribed by a physician, are covered up to \$300 a year. Option C offers chiropractic and naturopathic services up to \$100 a year.

Premium rates for the Basic Plan are \$76 a year for single persons, \$152 for families of two persons and \$200 for families of three or more. Options A and B cost an additional \$24, \$48 and \$72, respectively, and Option C an additional \$12, \$24 and \$36, respectively. For individuals or families with little or no taxable income, premiums for both the Basic Plan and Options B and C may be reduced by means of subsidies from the province.

British Columbia.—The original government-operated British Columbia medical plan which took effect in September 1965 was administered by an agency directed by repre-

sentatives of government and the medical profession. The benefits included most physicians' services as well as limited physiotherapy, special nursing, chiropractic and naturopathy services. For eligible residents, the government offered subsidies amounting to 90 p.c. of the premium for persons with no taxable income and 50 p.c. for persons with taxable income from \$1 to \$1,000. In addition, the government established a medical grant stabilization fund, initially of \$2,000,000, to cover possible deficits.

The plan became one of several carriers or agencies of the British Columbia Medical Services Commission when this body was established as the public authority (see p. 270), to operate a comprehensive program beginning July 1, 1968 under the federal Medical Care Act. Under this program the Commission sets out criteria for population coverage, levels of benefits and premiums to be charged, and these criteria must be adhered to by all approved non-profit carriers acting as agents. As of mid-1968, annual premiums were \$60 for single persons, \$120 for a family of two, and \$150 for a family of three or more.

Ontario.—The Ontario medical services insurance plan began paying benefits in July 1966. The plan, offered to all eligible Ontario residents on an individual and family enrolment basis, covers most physicians' services. The government pays, as a subsidy, the full premium of applicants who had had no taxable income during the preceding year or who were recipients of public assistance. It pays 50 p.c. of the premium for a single applicant who had a taxable income of \$500 or less; 50 p.c. of the premium for a family of two persons with a total taxable income of \$1,000 or less; and 60 p.c. of the premium for a family of three or more persons with a total taxable income of \$1,300 or less. Annual premiums in mid-1968 were \$70.80 for a single person, \$141.60 for a family of two, and \$177.00 for a family of three or more persons. A limited amount of group coverage insurance is offered but, in the main, such enrolment is left to voluntary private plans.

Health Care Programs for Welfare Recipients.—Provincial health benefit programs for specified categories of welfare recipients have been in operation for several years in Nova Scotia, Ontario, Alberta, Manitoba, Saskatchewan and British Columbia, and Newfoundland has long operated a plan providing care as required for persons in need. Each of these schemes provide certain physicians' services benefits under arrangements with the provincial medical associations, and in the western provinces a range of other health services.

Saskatchewan, Alberta, British Columbia and Ontario have recently introduced province-wide medical insurance schemes replacing previous provisions and providing automatic insurance coverage of physicians' services to welfare recipients, and Prince Edward Island, New Brunswick and Quebec have set up new medical welfare plans to provide physicians' services expressly for the welfare recipients. These changes have coincided with the introduction of the Canada Assistance Plan Act (see p. 310) and the Medical Care Act (see p. 270) under which federal contributions are made to provincial medical insurance plans and health care services provided by provinces to persons in need. All recipients of provincial welfare assistance are covered under most of these programs; Manitoba and Nova Scotia give coverage to selected categories of needy persons.

The range of services covered under each scheme is virtually comprehensive and includes physicians' visits in the home, office and hospital, surgery, diagnostic and therapeutic procedures, and obstetrical care. All generally used prescription drugs are included in New Brunswick, Manitoba, Saskatchewan and British Columbia; extensive dental care and optical care are provided in the four westernmost provinces, although certain services may be subject to special authorization, to dollar limits, or both. Ontario has a basic dental-care program for recipients of mothers' and dependent fathers'

allowances and their children, and shares the cost of prescribed optical care, prosthetic appliances, drugs and dental care provided at municipal discretion. Such services as home nursing, appliances, physiotherapy, podiatry, chiropractic and emergency transportation may also be paid under some programs.

Subsection 5.—Services for the Disabled and Chronically Ill

The success of rehabilitation programs for injured workers, veterans, handicapped children and other disability groups has encouraged more recent efforts to extend such services to all handicapped persons. Physical medicine and rehabilitation departments have been established in teaching hospitals and in most veterans' and children's hospitals. There are about 40 children's hospitals and rehabilitation centres located in the main cities; many children are also treated at general hospitals, or at rehabilitation centres that serve both adults and children. Five rehabilitation centres are operated under workmen's compensation programs. Services for veterans are dealt with at pp. 327-329.

Hospital services available to in-patients and out-patients include physical medicine, physiotherapy, occupational therapy and social services; most of the children's hospitals and the teaching hospitals also supply speech therapy. The rehabilitation centres provide comprehensive medical, psychosocial and vocational services to more severely disabled persons. Provincial and community agencies providing rehabilitation and home care services co-operate in the rehabilitation of disabled persons.

Most large general hospitals operate out-patient clinics for various diseases and disabilities, such as arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases and orthopaedic and neurological conditions. Voluntary agencies concerned with such specific disability groups as arthritics, the blind, the deaf, children suffering from cystic fibrosis, haemophilia or muscular dystrophy, the mentally ill or retarded, or disabled persons generally, are also broadening their rehabilitation services to include counselling, personal aids and appliances, transportation, employment and education, sheltered workshops and services for the homebound. Home care programs, under either hospital or community sponsorship, have been established in five provinces to provide nursing, homemaker, physiotherapy and other services to the disabled, the chronically ill, the aged, and the convalescent.

Provincial health, welfare and education departments and voluntary agencies are developing specialized services for physically and mentally handicapped children. Most provinces have registries of handicapped children, of varying coverage, and these are being found increasingly useful in the planning and co-ordination of rehabilitation services. In addition to medical rehabilitation, health departments and the crippled children's societies provide family counselling, recreation, transportation and foster home care; travelling clinics extend periodic diagnostic and treatment services to outlying areas. Special schools or classes for various groups of handicapped children are operated by local school boards in the main cities but most of the 15 residential schools for the deaf and the six for the blind are operated under provincial auspices.

Regional prosthetic research and training units, supported by national health grants, have been set up in rehabilitation centres in Montreal, Toronto and Winnipeg, and in the Bio-Engineering Institute of the University of New Brunswick. Artificial limbs and prosthetic appliances are available in 12 Prosthetic Centres across Canada in accordance with provisions determined by provincial health departments. A federal-provincial program assists in the extraordinary rehabilitation, maintenance and counselling costs on behalf of children with thalidomide-induced defects.

Ten university schools offer training in physical therapy and/or occupational therapy and three provide training in audiology and speech therapy. In the year ended Mar. 31, 1968, of the \$40,370,400 made available through the general health grants to assist the provinces in their rehabilitation programs, \$2,885,550 was specifically allocated to the Medical Rehabilitation and Crippled Children Grant. These grants are used to develop medical rehabilitation personnel through grants to the university schools and student bursaries, for equipment and for research.

Section 3.—Emergency Health Services

Federal concern with emergency health matters began in 1951 when the responsibility for civil defence was transferred from the Department of National Defence to the Department of National Health and Welfare and the Civil Defence Health Services group was formed within the Department to make plans for health services in a wartime emergency. In 1959, the Civil Defence Order assigned special powers and duties to several Ministers of the Crown to prepare and to assist the provincial and municipal governments to prepare for war emergencies (this Order, as amended in 1963, was replaced in 1965 by the Civil Emergency Measures Planning Order) and the Canada Emergency Measures Organization was created to co-ordinate civil-defence planning (see Chapter XXVI, Part III). At the same time, the Minister of National Health and Welfare established the Emergency Health Services Division in his Department.

The Emergency Health Services Division, which is supported by an advisory committee, encourages the provinces to develop their own emergency health services divisions. These are organized under a provincial director who is generally assisted by a health-supplies officer and a nursing consultant. A staff medical officer represents the federal Emergency Health Services in each provincial organization.

The provincial emergency health services have four tasks: they ensure effective functioning of health services so that vital health services will be maintained in an emergency or reorganized after a disaster; they encourage and co-ordinate local planning for the development of emergency medical units; they inform and educate the public through courses in first aid to the injured and in home nursing, and train professional health workers, students and volunteers for their functions during an emergency; and they dispose emergency medical units of the national stockpile at strategic locations. Since 1967 this last activity may be financially supported by the Federal Government through the Emergency Health Services Division.

Not all provincial and municipal health departments have developed their emergency planning to such an extent that they could function in a wartime disaster. Some, however, have planned their emergency measures so that they have been able to meet peacetime disasters successfully. Many emergency medical units have been strategically located and the governments generally are agreed upon the objective of emergency health planning.

Section 4.—Hospital and Other Health Statistics

Statistical information on the health of Canadians is limited to the well established and highly standardized mortality, communicable disease and institutional statistics series, all of which have been available for a long period, and the recently established series covering operations under the federal-provincial hospital insurance program (pp. 272-274). Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 243-246; those on hospital statistics in Subsection 1 following; those on notifiable diseases in Subsection 2; and those relating to physicians and their earnings in Subsection 3.

Subsection 1.—Hospital Statistics*

Canadian hospitals are classified, for statistical purposes, according to (1) type of ownership, which can be public, private or federal, and (2) type of service provided, which can be general, allied special (chronic, convalescent, rehabilitation, maternity, communicable disease and orthopaedic), mental or tuberculosis. General hospitals, which account for the greater number of beds, are subdivided by size, based on rated bed capacity.

The number of hospitals operating in Canada increased from 1,421 in 1966 to 1,424 in 1967, resulting in a 2-p.c. increase in total rated bed capacity from 207,309 to 211,422 (Table 5). The number of rated beds per 1,000 population (10.4) remained the same as in 1966. The proportion of rated beds accounted for by general and allied special hospitals has been rising over the past few years, while the proportions for mental and tuberculosis hospitals have been declining. In 1967, 55.8 p.c. of the rated beds, or 5.9 beds per 1,000 population, were accounted for by general hospitals, ranging from 5.0 in Quebec to 7.1 in Saskatchewan (Table 6). Mental hospitals accounted for 31.0 p.c. of the rated beds (3.2 per 1,000 population), allied special hospitals had 10.9 p.c. (1.2 per 1,000 population) and the remainder (2.3 p.c.) were located in tuberculosis sanatoria (0.2 beds per 1,000 population).

* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: *Hospital Statistics*, Vols. I to VII (Catalogue Nos. 83-210 to 83-216); *Mental Health Statistics*, Vol. III (Catalogue No. 83-205); *Tuberculosis Statistics*, Vol. II (Catalogue No. 83-207); and *List of Canadian Hospitals and Related Institutions and Facilities* (Catalogue No. 83-201).

5.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, 1963-67

Type	1963	1964	1965	1966*	1967
HOSPITALS					
	No.	No.	No.	No.	No.
General.....	948	942	955	948	953
Allied special.....	307	327	328	325	324
Mental.....	92	100	105	108	108
Tuberculosis.....	42	45	45	40	39
Totals.....	1,384	1,414	1,433	1,421	1,424
BEDS					
	No.	No.	No.	No.	No.
General.....	106,822	110,522	112,098	114,591	117,895
Allied special.....	21,184	20,802	21,901	22,285	23,070
Mental.....	65,954	65,548	65,928	65,265	65,545
Tuberculosis.....	8,691	6,350	5,912	5,168	4,912
Totals.....	202,651	203,222	205,839	207,309	211,422

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type, 1967

Province or Territory and Category	General			Allied Special			Totals, General and Allied Special		
	Hos-pitals	Beds	Beds per 1,000 Popu-lation ¹	Hos-pitals	Beds	Beds per 1,000 Popu-lation ¹	Hos-pitals	Beds	Beds per 1,000 Popu-lation ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—									
Public.....	33	2,905	5.8	14	228	0.5	47	3,133	6.3
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public.....	8	724	6.6	1	30	0.3	9	754	6.9
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public.....	44	4,298	5.7	3	185	0.2	47	4,483	5.9
Private.....	1	5	—	—	—	—	1	5	—
Federal.....	2	564	0.7	—	—	—	2	564	0.7
New Brunswick—									
Public.....	38	3,630	5.9	2	105	2.2	40	3,735	6.1
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	1	305	0.5	—	—	—	1	305	0.5
Quebec—									
Public.....	135	26,714	4.6	42	6,387	1.1	177	33,101	5.7
Private.....	29	966	0.2	53	2,435	0.4	82	3,401	0.6
Federal.....	2	925	0.2	9	1,136	0.2	11	2,061	0.4
Ontario—									
Public.....	184	39,046	5.5	40	5,315	0.7	224	44,361	6.2
Private.....	13	616	0.1	60	1,544	0.2	73	2,160	0.3
Federal.....	5	1,882	0.3	4	16	—	9	1,898	0.3
Manitoba—									
Public.....	78	5,135	5.3	4	935	1.0	82	6,070	6.3
Private.....	3	35	—	1	50	0.1	4	85	0.1
Federal.....	3	693	0.7	10	37	—	13	730	0.7
Saskatchewan—									
Public.....	143	6,751	7.0	7	584	0.6	150	7,335	7.6
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	2	110	0.1	1	4	—	3	114	0.1
Alberta—									
Public.....	114	9,576	6.4	28	2,751	1.8	142	12,327	8.2
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	5	910	0.6	3	11	—	8	921	0.6
British Columbia—									
Public.....	87	9,822	5.0	21	1,232	0.6	108	11,054	5.6
Private.....	5	44	—	—	—	—	5	44	—
Federal.....	5	1,731	0.9	—	—	—	5	1,731	0.9
Yukon and Northwest Territories—									
Public.....	9	254	5.8	—	—	—	9	254	5.8
Private.....	1	8	0.2	—	—	—	1	8	0.2
Federal.....	3	246	5.6	21	85	1.9	24	331	7.5
Canada—									
Public.....	873	108,855	5.3	162	17,752	0.9	1,035	126,607	6.2
Private.....	52	1,674	0.1	114	4,029	0.2	166	5,703	0.3
Federal.....	28	7,366	0.4	48	1,289	0.1	76	8,655	0.5

¹ Based on estimated population as at June 1, 1967.

6.—Number and Bed Capacity of Operating Public, Private and Federal Hospitals, by Province and Type, 1967—concluded

Province or Territory and Category	Mental			Tuberculosis			Totals, All Hospitals		
	Hos- pitals	Beds	Beds per 1,000 Popu- lation ¹	Hos- pitals	Beds	Beds per 1,000 Popu- lation ¹	Hos- pitals	Beds	Beds per 1,000 Popu- lation ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—									
Public.....	1	826	1.7	1	278	0.6	49	4,237	8.6
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—
Prince Edward Island—									
Public.....	2	391	3.6	1	70	0.6	12	1,215	11.1
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—
Nova Scotia—									
Public.....	5	1,830	2.4	2	352	0.5	54	6,665	8.8
Private.....	—	—	—	—	—	—	1	5	—
Federal.....	—	—	—	—	—	—	2	564	0.7
New Brunswick—									
Public.....	4	2,074	3.4	3	416	0.7	47	6,225	10.2
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	1	305	0.5
Quebec—									
Public.....	29	18,512	3.2	10	1,341	0.2	216	52,954	9.1
Private.....	—	—	—	—	—	—	82	3,401	0.6
Federal.....	—	—	—	—	—	—	11	2,061	0.4
Ontario—									
Public.....	35	22,966	3.2	12	1,008	0.1	271	68,335	9.5
Private.....	7	634	0.7	—	—	—	80	2,794	1.0
Federal.....	—	—	—	1	150	—	10	2,048	0.3
Manitoba—									
Public.....	6	2,973	3.1	2	227	0.2	90	9,270	9.6
Private.....	—	—	—	—	—	—	4	85	0.1
Federal.....	—	—	—	—	—	—	13	730	0.7
Saskatchewan—									
Public.....	4	2,963	3.1	2	312	0.3	156	10,610	1.1
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	3	114	0.1
Alberta—									
Public.....	8	6,016	4.1	2	400	0.3	152	18,743	12.6
Private.....	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	8	921	0.6
British Columbia—									
Public.....	6	6,287	3.2	2	171	0.1	116	17,512	8.9
Private.....	1	73	—	—	—	—	6	117	—
Federal.....	—	—	—	—	—	—	5	1,731	0.9
Yukon and Northwest Territories—									
Public.....	—	—	—	—	—	—	9	254	5.8
Private.....	—	—	—	—	—	—	1	8	0.2
Federal.....	—	—	—	—	—	—	24	331	7.5
Canada—									
Public.....	100	64,838	3.2	37	4,575	0.2	1,172	196,020	9.6
Private.....	8	707	—	—	—	—	174	6,410	0.3
Federal.....	—	—	—	1	150	—	77	8,805	0.5

¹ Based on estimated population as at June 1, 1967.

Although data pertaining to the number of hospitals in operation, their classification and their rated bed capacities (Tables 5 and 6) were available for 1967 at the time of preparation of this Subsection, 1966 data were the latest available for Tables 7 to 13 and 1964 data for Tables 14 and 15.

Total adult and child admissions to Canadian hospitals exceeded 3,253,000 in 1966, an increase of 1.0 p.c. over 1965 (Table 7) but the number of admissions per 1,000 population decreased from 164 to 162; admissions to general hospitals numbered 3,090,900 or 154 per 1,000 population. In 1966 there was an average daily population of 178,980 patients in Canadian hospitals as compared with an average of 180,650 in 1965. Of the 1966 average daily total, general hospitals accounted for 50.7 p.c. and mental hospitals for 36.5 p.c. Percentage occupancy varied with the type of hospital and was highest in private mental hospitals (101.9 p.c.) and lowest in federal tuberculosis sanatoria (65.4 p.c.).

7.—Movement of Patients and Patient-Days in Operating Public, Private and Federal Hospitals, 1965 and 1966

NOTE.—“Patients” refers to adults and children. All ratios are based on population estimates as at June 1 of the year concerned.

Type of Service and Item	1965	1966	Type of Service and Item	1965	1966
PUBLIC HOSPITALS			PRIVATE HOSPITALS— concluded		
General—			Allied Special—		
Beds set up at Dec. 31.....	101,700	105,700	Beds set up at Dec. 31.....	3,900	4,000
Admissions.....	2,902,500	2,968,100	Admissions.....	16,900	18,000
Per 1,000 population.....	147.8	148.3	Per 1,000 population.....	0.9	0.9
Patient-days.....	29,812,100	30,576,500	Patient-days.....	1,259,100	1,337,700
Per 1,000 population.....	1,517.6	1,527.7	Per 1,000 population.....	64.1	66.8
Average daily number of patients.....	81,676.9	83,771.5	Average daily number of patients.....	3,449.5	3,665.0
Per 1,000 population.....	4.2	4.2	Per 1,000 population.....	0.2	0.2
Percentage occupancy ¹	81.4	80.4	Percentage occupancy ¹	90.5	91.1
Allied Special—			Mental—		
Beds set up at Dec. 31.....	16,600	16,800	Beds set up at Dec. 31.....	700	700
Admissions.....	85,500	74,700	Admissions.....	4,500	4,800
Per 1,000 population.....	4.4	3.7	Per 1,000 population.....	0.2	0.2
Patient-days.....	5,113,800	4,329,200	Patient-days.....	252,700	261,400
Per 1,000 population.....	260.3	216.3	Per 1,000 population.....	12.9	13.1
Average daily number of patients.....	14,010.5	14,600.5	Average daily number of patients.....	692.4	716.1
Per 1,000 population.....	0.7	0.7	Per 1,000 population.....	--	--
Percentage occupancy ¹	88.0	86.8	Percentage occupancy ¹	102.0	101.9
Mental—			FEDERAL HOSPITALS		
Beds set up at Dec. 31.....	69,700	67,100	General—		
Admissions.....	51,000	52,100	Beds set up at Dec. 31.....	9,300	7,300
Per 1,000 population.....	2.6	2.6	Admissions.....	84,300	68,000
Patient-days.....	24,489,600	23,535,800	Per 1,000 population.....	4.3	3.4
Per 1,000 population.....	1,246.7	1,175.9	Patient-days.....	2,518,500	2,001,400
Average daily number of patients.....	67,094.7	64,594.5	Per 1,000 population.....	128.2	100.0
Per 1,000 population.....	3.4	3.2	Average daily number of patients.....	6,900.1	5,483.4
Percentage occupancy ¹	102.8	100.0	Per 1,000 population.....	0.4	0.3
Tuberculosis—			Percentage occupancy ¹	72.2	74.6
Beds set up at Dec. 31.....	5,500	4,800	Allied Special—		
Admissions.....	9,800	9,000	Beds set up at Dec. 31.....	1,500	1,500
Per 1,000 population.....	0.5	0.4	Admissions.....	3,000	3,000
Patient-days.....	1,405,100	1,210,100	Per 1,000 population.....	0.2	0.1
Per 1,000 population.....	71.5	60.5	Patient-days.....	416,000	418,200
Average daily number of patients.....	3,849.6	3,338.0	Per 1,000 population.....	21.2	20.9
Per 1,000 population.....	0.2	0.2	Average daily number of patients.....	1,139.9	1,145.8
Percentage occupancy ¹	69.4	68.4	Per 1,000 population.....	0.6	0.1
PRIVATE HOSPITALS			Percentage occupancy ¹	79.0	79.3
General—			Tuberculosis—		
Beds set up at Dec. 31.....	1,900	1,800	Beds set up at Dec. 31.....	300	300
Admissions.....	66,700	54,800	Admissions.....	1,900	600
Per 1,000 population.....	3.4	2.7	Per 1,000 population.....	0.1	--
Patient-days.....	579,300	526,200	Patient-days.....	92,400	80,400
Per 1,000 population.....	29.5	26.3	Per 1,000 population.....	4.7	4.0
Average daily number of patients.....	1,587.1	1,441.6	Average daily number of patients.....	253.0	220.4
Per 1,000 population.....	0.1	0.1	Per 1,000 population.....	--	--
Percentage occupancy ¹	82.8	85.6	Percentage occupancy ¹	75.1	65.4

¹ Based on rated bed capacity.

In 1966 the average length of stay of adults and children separated from public general and allied special hospitals was 11.7 days, little changed from 1965. Table 8 shows the variation in average length of stay by type of hospital and by region. The chronic, convalescent and rehabilitation hospitals, with an average length of stay of 151 days in 1966, represent the upper limit, far exceeding that of other types of hospital. In public general hospitals length of stay increases with bed capacity, usually because of the greater availability and utilization of more complex services in larger hospitals to which more severe cases are referred.

8.—Average Length of Stay of Adults and Children in Public General and Allied Special Hospitals, by Province, 1966

Type of Hospital	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	days	days	days	days	days	days	days	days	days	days	days	days	days
General.....	10.7	9.9	10.6	10.2	10.2	11.0	9.1	9.4	8.7	9.4	5.7	9.0	10.2
1- 9 beds.....	—	—	8.4	7.6	11.2	—	8.8	7.1	6.1	4.0	—	—	7.4
10- 24 ".....	5.9	8.6	7.9	8.2	7.2	7.5	7.2	7.3	7.0	7.4	5.7	6.7	7.2
25- 49 ".....	7.5	8.1	9.0	7.8	8.2	9.1	7.1	7.4	6.7	7.4	—	9.8	7.7
50- 99 ".....	8.8	7.1	9.7	9.1	8.0	10.2	8.1	8.6	7.8	7.9	—	—	8.8
100-199 ".....	11.2	10.6	10.2	9.6	9.1	9.8	9.7	9.4	7.5	8.6	—	—	9.3
200-299 ".....	11.6	11.0	11.4	10.0	9.8	10.5	8.4	13.7	9.2	8.7	—	—	10.1
300-499 ".....	15.5	—	10.5	12.0	10.5	11.1	9.8	11.5	9.0	10.1	—	—	10.9
500-999 ".....	—	—	13.9	15.6	12.2	11.7	10.8	13.0	9.8	11.1	—	—	11.8
1,000 or more beds.....	—	—	—	—	12.3	13.8	12.6	—	14.2	12.7	—	—	13.2
Allied Special—													
Chronic, convalescent and rehabilitation.....	161.1	49.0	31.4	55.9	179.8	176.3	108.7	283.7	131.2	65.9	—	—	150.8
Other.....	5.5	—	7.0	21.4	19.9	9.8	—	2.7	5.3	7.3	—	—	11.9
All Public Hospitals.....	11.1	10.2	10.6	10.6	12.4	12.6	10.9	10.2	10.9	9.7	5.7	9.0	11.7

Total full-time personnel in Canadian hospitals increased by 3.9 p.c. from 274,650 in 1965 to 285,443 in 1966. In all general hospitals there were 192.3 full-time personnel per 100 rated beds, 61.9 in mental hospitals and 86.0 in tuberculosis sanatoria (Table 9). The proportion of the civilian labour force employed both full-time and part-time in all Canadian hospitals gradually increased from 3.7 p.c. in 1961 to 4.3 p.c. in 1966.

9.—Full-Time Personnel Employed in Operating Public, Private and Federal Hospitals, by Province, 1966

Province or Territory	General		General and Allied Special		Mental		Tuberculosis	
	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds	Number	Per 100 Rated Beds
Newfoundland.....	4,915	172.8	5,066	168.1	707	85.6	221	79.5
Prince Edward Island.....	1,046	151.0	1,087	151.6	248	62.3	79	88.6
Nova Scotia.....	8,626	181.5	8,947	181.2	1,697	68.1	471	136.9
New Brunswick.....	7,450	198.2	7,663	194.3	1,234	61.2	380	93.6
Quebec.....	65,473	234.2	74,859	202.6	10,222	55.7	1,085	76.7
Ontario.....	75,711	192.4	83,101	178.1	15,307	67.0	985	72.7
Manitoba.....	10,319	179.8	11,707	173.1	1,893	76.4	205	90.3
Saskatchewan.....	11,087	164.3	11,457	166.2	1,766	59.6	307	101.7
Alberta.....	16,204	158.3	18,431	142.7	3,331	57.0	417	103.0
British Columbia.....	17,007	153.8	18,176	150.0	3,577	56.4	293	80.1
Yukon Territory.....	148	101.4	158	98.8	—	—	—	—
Northwest Territories.....	309	81.3	306	81.0	—	—	—	—
Canada.....	218,295	192.3	241,018	177.5	39,982	61.9	4,443	86.0

The total revenue for all public hospitals in 1966 was \$1,477,700,000, an increase of 14.5 p.c. over 1965. The proportion of total revenues accounted for by net in-patient

earnings ranged from 76.8 p.c. in public mental hospitals to 93.3 p.c. in public allied special hospitals (Table 10). In public general hospitals revenue amounted to \$1,114,367,000 in 1966, also an increase of 14.5 p.c. over 1965.

Total expenditures in all public hospitals for 1966 were \$1,544,700,000, an increase of 15.1 p.c. over the previous year (Table 10). Gross salaries and wages represented the largest expenditure item ranging from 63.8 p.c. in "other" allied special hospitals to 71.3 p.c. in mental hospitals. In public general hospitals, 1966 expenditures at \$1,170,390,000, were up 15.0 p.c. over 1965. The proportion of expenditures allocated to gross salaries and wages was lower in the Atlantic Provinces than in other provinces (Table 11).

In public general hospitals the cost per patient-day of care increased 13.2 p.c. from \$34.05 in 1965 to \$38.56 in 1966. In public general hospitals it was lowest in the 10-24 bed size (\$26.13) and highest in hospitals with 1,000 or more beds (\$46.24), as shown in Table 12. Provincially, the cost per patient-day varied from \$26.38 in Prince Edward Island to \$49.07 in Quebec (Table 13).

The per capita cost of operating and maintaining all public hospitals increased by nearly 63 p.c. in the period 1961-66, from \$47.46 to \$77.18.

10.—Revenues and Expenditures of Operating Public Hospitals, by Type, 1966

Type of Hospital	Operating Hospitals	Revenues				Expenditures				
		Net In-patient Earnings	Net Out-patient Earnings	Grants and Other Income	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	p.c.	p.c.	p.c.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
General.....	869	88.8	5.5	5.7	1,114,367	65.3	3.2	3.8	27.7	1,170,390
1- 9 beds....	33	83.2	8.6	8.2	1,957	64.8	2.6	3.7	28.9	2,018
10- 24 "....	204	88.4	6.1	5.5	22,330	60.0	2.5	4.7	32.8	23,623
25- 49 "....	197	89.8	5.6	4.6	46,525	60.1	2.6	4.3	33.0	48,999
50- 99 "....	149	91.0	5.2	3.8	82,592	63.8	2.7	3.9	29.6	86,167
100-199 "....	128	90.4	5.2	4.4	165,579	65.8	2.9	3.7	27.6	174,670
200-299 "....	63	89.1	5.5	5.4	157,496	64.7	3.2	3.7	28.4	166,639
300-499 "....	56	88.2	6.0	5.8	233,776	65.5	3.2	3.5	27.8	245,977
500-999 "....	30	88.1	5.4	6.5	266,119	66.4	3.3	3.9	26.4	279,388
1,000 or more beds	9	87.8	5.0	7.2	137,993	66.7	3.8	3.8	25.7	142,909
Allied Special—										
Chronic, conva-										
lescent and re-										
habilitation...	104	93.3	1.3	5.4	81,594	69.4	1.3	2.3	27.0	85,502
Other.....	54	80.4	4.4	15.2	24,490	63.8	2.3	2.7	31.2	25,895
Mental.....	99	76.8	0.3	22.9	231,904	71.3	0.8	2.5	25.4	236,716
Tuberculosis.....	38	87.1	1.9	11.0	25,335	66.4	1.1	2.1	30.4	26,230

11.—Revenues and Expenditures of Operating Public General Hospitals, by Province, 1966

Province or Territory	Operating Hospitals	Total Revenue	Expenditures				
			Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Other	Total
	No.	\$'000	p.c.	p.c.	p.c.	p.c.	\$'000
Newfoundland.....	34	21,261	52.1	3.7	5.1	39.1	23,401
Prince Edward Island.....	8	4,556	58.8	3.0	4.2	34.0	4,665
Nova Scotia.....	44	38,584	57.6	3.1	3.8	35.5	39,430
New Brunswick.....	36	34,201	58.0	3.5	3.8	34.7	34,463
Quebec.....	132	328,008	68.4	3.1	3.7	24.8	362,530
Ontario.....	181	411,617	65.3	3.2	3.7	27.8	418,120
Manitoba.....	78	49,042	64.7	3.4	4.5	27.4	49,027
Saskatchewan.....	144	57,811	64.4	3.1	3.8	28.7	60,202
Alberta.....	114	77,060	62.0	3.0	3.5	31.5	82,032
British Columbia.....	88	90,362	66.8	3.4	3.7	28.1	95,116
Yukon Territory.....	2	152	58.4	4.4	3.0	34.2	175
Northwest Territories.....	8	1,113	54.2	1.9	2.8	41.1	1,229

**12.—Patient-Day¹ Revenue and Expenditure Ratios of Operating Public Hospitals,
by Size and Type of Hospital, 1966**

Type of Hospital	Operating Hospitals	Revenues		Expenditures			
		Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	No.	\$	\$	\$	\$	\$	\$
General.....	869	32.61	36.72	25.22	1.21	1.46	38.56
1- 9 beds.....	33	21.81	26.00	17.33	0.69	1.01	26.74
10- 24 ".....	204	21.81	24.69	15.69	0.64	1.23	26.13
25- 49 ".....	197	23.09	25.70	16.30	0.69	1.16	27.03
50- 99 ".....	149	25.57	28.11	18.75	0.78	1.15	29.34
100-199 ".....	128	30.05	33.27	23.10	0.99	1.31	35.09
200-299 ".....	63	32.00	35.92	24.62	1.20	1.40	37.97
300-499 ".....	56	33.90	38.46	26.57	1.28	1.44	40.45
500-999 ".....	30	38.45	43.67	30.42	1.53	1.79	45.84
1,000 or more beds.....	9	39.17	44.62	30.87	1.74	1.76	46.24
Allied Special—							
Chronic, convalescent and re-habilitation.....	104	15.99	17.16	12.47	0.23	0.42	17.94
Other.....	54	41.34	51.41	34.79	1.26	1.45	54.57
Mental.....	99	7.46	9.72	7.07	0.08	0.25	9.92
Tuberculosis.....	38	18.32	20.94	14.45	0.23	0.45	21.76

¹ Adults and children.

**13.—Patient-Day¹ Revenue and Expenditure Ratios of Operating Public Hospitals,
by Province and Type of Hospital, 1966**

Province and Type of Hospital	Revenues		Expenditures			
	Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	\$	\$	\$	\$	\$	\$
Newfoundland—						
General.....	26.11	30.24	17.40	1.21	1.74	33.14
Allied Special—						
Chronic, convalescent and rehabilitation....	9.76	12.24	8.54	0.15	0.14	11.96
Mental.....	0.22	12.14	6.64	0.13	0.57	12.14
Tuberculosis.....	16.74	17.59	9.53	0.32	0.66	17.59
Prince Edward Island—						
General ¹	20.63	25.77	15.53	0.79	1.10	26.38
Allied Special—						
Chronic, convalescent and rehabilitation....	23.29	30.40	22.86	1.26	0.34	32.32
Mental.....	1.54	9.01	5.91	0.07	0.46	9.02
Tuberculosis.....	28.93	30.81	21.19	0.33	0.53	30.81
Nova Scotia—						
General.....	28.53	33.00	19.44	1.04	1.27	33.72
Allied Special—						
Chronic, convalescent and rehabilitation....	22.22	30.69	18.48	0.68	0.61	30.52
Other.....	45.07	50.04	29.64	1.32	1.21	51.44
Mental.....	4.57	10.10	6.76	0.17	0.16	10.05
Tuberculosis.....	27.11	29.07	19.31	0.70 ²	—	29.07
New Brunswick—						
General.....	26.71	32.50	19.00	1.16	1.25	32.72
Allied Special—						
Chronic, convalescent and rehabilitation....	20.89	22.07	14.22	0.42	0.79	22.18

¹ Adults and children.

² Includes drugs.

**13.—Patient-Day¹ Revenue and Expenditure Ratios of Operating Public Hospitals,
by Province and Type of Hospital, 1966—concluded**

Province or Territory and Type of Hospital	Revenues		Expenditures			
	Net In-patient Earnings	Total	Gross Salaries and Wages	Medical and Surgical Supplies	Drugs	Total
	\$	\$	\$	\$	\$	\$
New Brunswick—concluded						
Allied Special—concluded						
Other.....	20.23	22.62	15.89	0.50	0.42	25.02
Mental.....	0.77	8.28	5.87	0.06	0.19	8.28
Tuberculosis.....	18.55	19.57	13.48	0.13	0.30	21.24
Quebec—						
General.....	39.11	44.43	33.59	1.50	1.82	49.07
Allied Special—						
Chronic, convalescent and rehabilitation....	15.45	16.62	12.77	0.22	0.49	17.87
Other.....	40.81	45.07	32.99	1.26	1.23	48.29
Mental.....	8.54	8.93	6.53	0.03	0.34	9.58
Tuberculosis.....	15.30	16.60	12.06	0.18	0.78	18.82
Ontario—						
General.....	33.49	37.40	24.83	1.20	1.42	38.00
Allied Special—						
Chronic, convalescent and rehabilitation....	17.27	18.05	12.86	0.24	0.39	18.23
Other.....	50.81	76.08	45.52	1.50	2.39	78.99
Mental.....	10.41	10.78	8.18	0.13	0.18	10.79
Tuberculosis.....	17.54	21.63	14.84	0.15	0.21	22.14
Manitoba—						
General.....	30.03	33.02	21.84	1.13	1.51	33.01
Allied Special—						
Chronic, convalescent and rehabilitation....	20.43	22.99	15.93	0.34	0.66	22.96
Mental.....	3.29	8.46	6.27	0.09	0.24	8.44
Tuberculosis.....	15.91	18.08	10.75	0.17	0.22	16.97
Saskatchewan—						
General.....	26.36	29.31	19.64	0.96	1.16	30.52
Mental.....	0.52	10.87	7.98	0.05	0.27	10.87
Tuberculosis.....	13.42	21.17	14.51	0.11	0.26	20.22
Alberta—						
General.....	28.04	31.49	20.90	0.99	1.21	33.35
Allied Special—						
Chronic, convalescent and rehabilitation....	13.71	14.68	9.64	0.20	0.30	15.65
Other.....	32.50	33.16	26.24	1.42	0.99	38.26
Mental.....	1.27	8.68	6.16	0.02	0.19	8.68
Tuberculosis.....	29.41	33.95	24.09	0.17	0.43	33.95
British Columbia—						
General.....	28.26	31.10	21.88	1.10	1.21	32.72
Allied Special—						
Chronic, convalescent and rehabilitation....	12.11	13.66	11.92	0.17	0.23	16.20
Other.....	32.95	54.32	35.65	0.97	1.49	58.45
Mental.....	9.58	9.72	6.47	0.08	0.25	9.72
Tuberculosis.....	21.72	21.72	16.79	0.76	0.67	21.72
Yukon Territory—						
General.....	40.15	45.93	30.91	2.30	1.58	52.87
Northwest Territories—						
General.....	22.52	26.55	15.92	0.58	0.85	29.87

¹ Adults and children.

Hospital Morbidity.—A growing need for additional information on illness in Canada was met in part by a statistical program undertaken for 1964 involving separations (discharges and deaths) from the general and allied special hospitals. The program provided data on primary diagnosis, days of care, length of illness and age composition for all hospital patients except those in mental hospitals and tuberculosis sanatoria. (Age, sex and diagnostic information on persons treated in mental hospitals and in tuberculosis sanatoria has been available at the national level for many years but no similar information has been available for persons treated in the other kinds of hospitals.) About 100 out of every 1,000 persons are hospitalized during a year and, of these, 96 or 97 are treated in general and allied special hospitals. The 1964 data were the latest available at the time of preparation of this Subsection.

It should be noted that the picture of morbidity provided by these statistics is not, of course, complete. A total morbidity picture would include not only the morbidity covered by in-patient hospital care but also out-patient morbidity, morbidity covered by treatment outside the hospitals, and morbidity for which no treatment is received. Nevertheless, the illnesses that receive hospital care are, in general, more serious and more important than the illnesses that do not receive hospital care and this, together with the fact that the diagnostic quality of hospital morbidity statistics is very high, makes hospital morbidity statistics a most important source of information. Tables 14 and 15 present adult and child patients (excluding newborn) in terms of 17 diagnostic categories (Canadian) which consolidate the much more detailed international classification of diseases.

14.—Hospital Separations, Separations and Days per 100,000 Population, and Average Days Stay, by Diagnostic Category, 1964

(Excluding newborn and data for the Yukon and Northwest Territories)

Diagnostic Category ¹	Separations	Separations per 100,000 Population	Days per 100,000 Population	Average Days Stay
	No.	No.	No.	No.
Infective and Parasitic Diseases.....	43,478	227	3,310	14.6
Neoplasms.....	164,750	859	16,533	19.3
Allergic, Endocrine System, Metabolic and Nutritional Diseases.....	86,432	450	7,361	16.3
Diseases of the Blood and Blood-Forming Organs.....	17,300	90	1,365	15.1
Mental, Psychoneurotic and Personality Disorders.....	85,660	446	8,224	18.4
Diseases of the Nervous System and Sense Organs.....	147,139	767	21,271	27.7
Diseases of the Circulatory System.....	241,674	1,260	28,154	22.4
Diseases of the Respiratory System.....	471,116	2,456	16,102	6.6
Diseases of the Digestive System.....	411,359	2,144	22,237	10.4
Diseases of the Genito-Urinary System.....	244,185	1,273	12,500	9.8
Deliveries and Complications of Pregnancy, Childbirth and the Puerperium.....	592,547	3,088	17,655	5.7
Diseases of the Skin and Cellular Tissue.....	62,395	325	3,212	9.9
Diseases of the Bones and Organs of Movement.....	105,869	552	11,046	20.0
Congenital Malformations.....	29,612	154	2,345	15.2
Certain Diseases of Early Infancy.....	9,973	52	679	13.1
Symptoms, Senility and Ill-Defined Conditions.....	71,655	373	3,128	8.4
Accidents, Poisonings and Violence (nature of injury).....	277,379	1,446	16,751	11.6
Supplementary Classifications for Special Admissions, Live- births.....	20,557	107	2,031	19.0
All Causes.....	3,083,080	16,069	193,904	12.1

¹ Major groupings of the international classification of diseases. Information on the detailed categories included in these main groupings is available in DBS publication *Hospital Morbidity* (Catalogue No. 82-206).

15.—Hospital Separations per 100,000 Population, by Diagnostic Category and Age Group, 1964

(Excluding newborn and data for the Yukon and Northwest Territories)

Diagnostic Category ¹	Age Group					Total
	Under 15	15-24	25-44	45-64	65+	
Infective and Parasitic Diseases.....	361	205	139	130	194	227
Neoplasms.....	124	370	897	1,660	3,109	859
Allergic, Endocrine System, Metabolic and Nutritional Diseases.....	239	235	347	786	1,388	450
Diseases of the Blood and Blood-Forming Organs.....	89	44	55	93	304	90
Mental, Psychoneurotic and Personality Disorders.....	71	398	740	769	479	446
Diseases of the Nervous System and Sense Organs.....	651	300	418	916	3,052	767
Diseases of the Circulatory System.....	202	223	802	2,509	6,668	1,260
Diseases of the Respiratory System.....	4,858	1,348	903	1,121	2,409	2,456
Diseases of the Digestive System.....	1,495	1,623	2,099	3,090	4,032	2,144
Diseases of the Genito-Urinary System.....	452	1,019	1,836	1,779	2,357	1,273
Deliveries and Complications of Pregnancy, Childbirth and the Puerperium.....	5	7,987	7,182	63	—	3,088
Diseases of the Skin and Cellular Tissue.....	373	338	248	305	394	325
Diseases of the Bones and Organs of Movement..	171	323	642	1,053	1,233	552
Congenital Malformations.....	320	113	68	52	33	154
Certain Diseases of Early Infancy.....	154	1	—	—	—	52
Symptoms, Senility and Ill-Defined Conditions.....	333	312	344	429	645	373
Accidents, Poisonings and Violence (nature of injury).....	1,212	1,748	1,340	1,423	2,264	1,446
Supplementary Classifications for Special Admissions, Livebirths.....	51	86	98	146	340	107
All Causes.....	11,160	16,671	18,158	16,322	28,902	16,069

¹ See footnote to Table 14, p. 297.**Subsection 2.—Notifiable Diseases***

Three categories on the notifiable list established by the Dominion Council of Health continued to predominate in 1967—venereal diseases (24,696 cases), scarlet fever and streptococcal sore throat (20,121 cases) and infectious and serum hepatitis (8,224 cases).

The rate of venereal disease notifications, which had dropped from 121.3 per 100,000 population in 1964 to 117.2 in 1965 and 1966, increased slightly to 121.0 in 1967. Infectious and serum hepatitis, which had declined steadily over a number of years to a rate of 29.4 per 100,000 population in 1966, increased to 40.3 in 1967. Scarlet fever and streptococcal sore throat, however, had risen from 55.0 cases per 100,000 in 1964 to 100.9 in 1966 but decreased slightly to 98.6 in 1967.

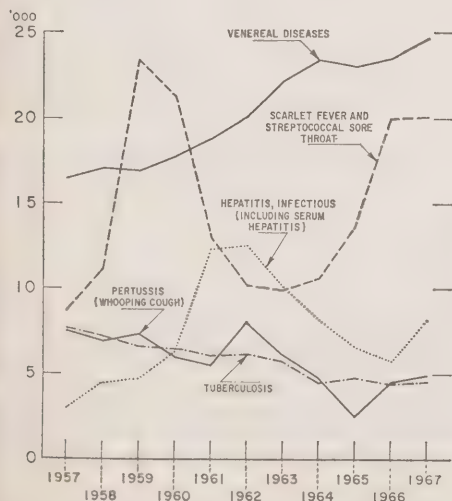
* Prepared in the Public Health Section, Health and Welfare Division, Dominion Bureau of Statistics.

16.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, 1964-67

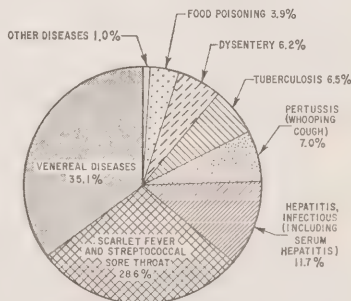
International List No.	Disease	Cases				Rates per 100,000 Population			
		1964	1965	1966	1967	1964	1965	1966	1967
		No.	No.	No.	No.				
044	Brucellosis (undulant fever)...	54	38	21		0.3	0.2	0.1	0.2
764	Diarrhoea of the newborn, epidemic.				43				
055	Diphtheria.....	114	128	140	21	1.0	1.1	0.7	0.2
045, 046, 048	Dysentery ¹	25	51	38	41	0.1	0.3	0.2	0.2
046	Amoebic.....	3,891	4,017	3,433	4,377	20.2	20.4	17.2	21.5
045	Bacillary.....	60	51	47	47	0.5	0.5	0.2	0.2
082.0	Encephalitis, infectious.....	1,346	1,827	1,285	1,491	7.0	9.8	9.6	7.3
049.0, 042.1, 049.2	Food poisoning.....	5	91	4	14	2	0.7	2	0.07
092, N998.5	Hepatitis, infectious (including serum hepatitis).....	1,582	1,728	2,638	2,764	12.5	13.5	13.2	13.5
080.2, 082.1	Meningitis, viral or aseptic.....	8,218	6,601	5,885	8,224	42.6	33.6	29.4	40.3
057	Meningococcal infections.....	163	313	138	175	1.3	2.5	0.7	0.9
766	Pemphigus neonatorum (impetigo of the newborn).....	115	88	86	105	0.6	0.4	0.4	0.5
056	Pertussis (whooping cough).....	11	39	10	47	0.1	0.3	2	3.6
080.0, 080.1	Polio myelitis, paralytic.....	4,844	2,472	4,555	4,954	25.1	12.6	22.8	24.3
050, 051	Scarlet fever and streptococcal sore throat.....	19	3	3	2	0.1	2	2	2
040, 041	Tuberculosis.....	10,605	13,591	20,189	20,121	55.0	69.2	100.9	98.6
	Typhoid and paratyphoid fever.....	4,541	4,803	4,517	4,601	23.5	24.5	22.6	22.5
030-034	Veneral diseases ¹	195	158	128	124	1.0	0.8	0.6	0.6
020-021.3, 023, 024, 026-029	Gonorrhoea.....	23,401	23,016	23,454	24,696	121.3	117.2	117.2	121.0
	Syphilis.....	20,628	20,453	21,479	22,342	106.9	104.1	107.3	109.6
		2,771	2,560	1,969	2,342	14.4	13.0	9.8	11.5

¹ Includes other cases and cases where type not specified.² 0.05 per 100,000 population or less.

TRENDS IN THE INCIDENCE OF MAJOR NOTIFIABLE DISEASES, 1957-67



PERCENTAGE OF TOTAL, 1967



17.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1967

Inter- national List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.
NUMBER OF CASES													
044	Brucellosis (undulant fever).....	—	—	1	—	33	4	1	3	—	1	—	—
764	Diarrhoea of the new-born, epidemic.....	—	—	1	—	1	1	—	1	2	16	—	—
045, 046, 048	Diphtheria.....	122	17	2,173	103	265	444	157	228	168	629	—	71
046	Amoebic.....	—	—	—	—	5	5	1	33	1	2	—	—
045	Bacillary.....	119	—	22	32	260	439	103	195	165	138	—	18
082.0, 042.1, 049.2	Encephalitis, infectious.....	—	1	2	1	—	1	2	3	6	—	—	—
049.0, 042.1, 049.2	Food poisoning.....	11	2	174	125	840	948	119	76	164	289	6	10
092, N998.5	Hepatitis, infectious (including serum hepatitis).....	1,028	201	284	473	537	1,854	375	911	860	1,664	—	37
080.2, 082.1	Meningitis, viral or aseptic.....	2	3	21	4	6	1	18	36	15	40	—	30
057	Meningococcal infections.....	25	—	3	1	17	27	3	7	8	12	—	2
766	Pemphigus neonatorum (impetigo of the new-born).....	—	1	46	—	—	1	—	—	—	—	—	1
056	Pertussis (whooping cough).....	327	70	463	13	1,659	1,557	49	52	492	264	—	8
080.0, 080.1, 050, 051	Poliomyelitis, paralytic	—	—	—	—	—	—	—	1	1	—	—	—
050, 051	Scarlet fever and streptococcal sore throat.....	620	5,003	867	95	4,621	3,822	110	790	1,700	2,477	2	14
001-019	Tuberculosis.....	236	18	173	127	1,482	1,151	199	191	325	522	12	165
040, 041	Typhoid and paratyphoid fever.....	2	2	—	6	45	28	—	13	13	14	—	1
030-034	Veneral diseases.....	502	40	391	461	3,711	4,539	2,756	2,314	3,730	4,974	415	863
020-021.3, 023, 024, 026-029, 036-038	Gonorrhoea.....	492	38	341	436	3,271	3,507	2,505	2,815	3,527	4,764	412	839
020-021.3, 023, 024, 026-029, 036-038	Syphilis.....	10	2	50	25	439	1,031	251	100	203	204	3	24
036-038	Other.....	—	1	—	—	1	1	—	1	—	6	—	—
RATES PER 100,000 POPULATION													
044	Brucellosis (undulant fever).....	—	—	0.1	—	0.6	0.06	0.1	0.3	—	0.05	—	—
764	Diarrhoea of the new-born, epidemic.....	0.2	—	0.1	—	3	1	—	1	0.1	0.8	—	—
045, 046, 048	Diphtheria.....	—	—	—	—	1	0.2	1.0	0.4	0.6	0.05	—	3.4
046	Amoebic.....	24.4	15.6	287.1	16.6	4.5	6.2	16.3	23.8	11.3	32.3	—	244.8
045	Bacillary.....	—	—	—	—	0.09	0.07	0.1	3.4	0.07	0.1	—	—
082.0, 042.1, 049.2	Encephalitis, infectious.....	23.8	3.1	2.9	5.2	4.4	6.1	10.7	20.4	11.1	7.1	—	62.1
049.0, 042.1, 049.2	Food poisoning.....	—	1	0.3	0.2	—	1	0.2	0.3	0.4	—	—	—
092, N998.5	Hepatitis, infectious (including serum hepatitis).....	2.2	1.8	23.0	20.2	14.3	13.3	12.4	7.9	11.0	14.8	400.0	344.8
080.2, 082.1	Meningitis, viral or aseptic.....	205.6	184.4	37.5	76.3	9.2	25.9	38.9	95.1	57.7	85.5	—	127.6
057	Meningococcal infections.....	0.4	2.8	2.7	0.6	0.1	1	1.9	3.8	1.0	2.1	—	103.4
766	Pemphigus neonatorum (impetigo of the new-born).....	5.0	—	0.4	0.2	0.5	0.4	0.3	0.7	0.5	0.6	—	6.9
056	Pertussis (whooping cough).....	—	1	6.1	—	—	1	—	—	—	—	—	34.5
080.0, 080.1, 050, 051	Poliomyelitis, paralytic	65.4	64.2	61.2	2.1	28.3	21.8	5.1	5.4	33.0	13.6	—	27.6
050, 051	Scarlet fever and streptococcal sore throat.....	—	—	—	—	—	—	—	0.1	0.07	—	—	—
001-019	Tuberculosis.....	124.0	4,589.9	114.5	15.3	78.7	53.5	11.4	82.5	114.1	127.2	13.3	48.3
040, 041	Typhoid and paratyphoid fever.....	47.2	16.5	22.9	20.5	25.3	16.1	20.7	19.9	21.8	26.8	80.0	569.0
030-034	Veneral diseases.....	0.4	1.8	—	1.0	0.8	0.4	—	1.4	0.9	0.7	—	3.4
020-021.3, 023, 024, 026-029, 036-038	Gonorrhoea.....	100.4	36.7	51.7	74.4	63.2	63.5	286.2	241.5	250.3	255.5	2,766.7	2,975.9
020-021.3, 023, 024, 026-029, 036-038	Syphilis.....	98.4	34.9	45.0	70.3	55.7	48.1	260.1	231.0	236.7	244.7	2,746.7	2,893.1
036-038	Other.....	2.0	1.8	6.6	4.0	7.5	14.4	26.1	10.4	13.6	10.5	20.0	82.8
036-038	Other.....	—	1	—	—	3	3	—	0.1	—	0.3	—	—

¹ Not reportable.
population.

² Includes other cases where type not specified.

³ Less than 0.05 per 100,000

Subsection 3.—Numbers of Physicians and Earnings of Those in Private Practice

There were 22,816 physicians in Canada (exclusive of those in the Yukon and Northwest Territories) in August 1967, or one physician for every 894 persons of the population. Table 18 gives the provincial distribution and population/physician ratios as calculated for 1967, and shows also the historical trends for Canada since 1901. British Columbia has the most favourable provincial ratio of physicians to population, followed by Ontario and Manitoba.

18.—Physicians and Population per Physician, 1901-67, and by Province, 1967

NOTE.—The three sets of figures differ in coverage. An estimate for 1967 comparable in coverage to the 1962 figure of 21,011 physicians would equal 23,601 physicians and 865 persons per physician.

Item, Year or Province	Active Civilian Physicians	
	Number	Population per Physician
Census Data—		
1901.....	5,475	972
1911.....	7,411	970
1921.....	8,706	1,008
1931.....	10,020	1,034
1941.....	10,723	1,072
Register of Physicians—¹		
1951.....	14,163	989
1954.....	15,651	977
1959.....	19,300	906
1962.....	21,011	881
1967 ²	23,601	865
Other Listing—³		
1967.....	22,816	894
Province—		
Newfoundland.....	332	1,506
Prince Edward Island.....	81	1,346
Nova Scotia.....	808	937
New Brunswick.....	476	1,303
Quebec.....	6,571	893
Ontario.....	8,508	840
Manitoba.....	1,098	877
Saskatchewan.....	972	986
Alberta.....	1,608	927
British Columbia.....	2,362	824
All Provinces.....	22,816	894

¹ Department of National Health and Welfare data (includes physicians in the Territories, non-registered physicians and all residents and senior interns). ² Estimate. ³ Source: Canadian Mailings Limited, *List Catalogue*, August 1967. Excludes non-registered physicians and immigrant senior interns.

Earnings.—More than 98 p.c. of the earnings of privately practising physicians and surgeons in Canada were obtained from fees charged for individual items of professional service. The average gross professional earnings of fee-practising physicians in 1966 amounted to \$35,223, a figure 7.4 p.c. higher than in 1965 and 53.7 p.c. higher than in 1959. The highest average gross earnings in 1966 were reported in Saskatchewan at \$40,150. In Ontario, Alberta and British Columbia they were above the national average and in the remaining provinces they ranged from \$33,589 in Manitoba to \$26,284 in Prince Edward Island. Generally, throughout the eight-year period 1959-66, average gross earnings have been at a higher level in Newfoundland, Ontario and the western provinces than in Quebec and the Maritime Provinces.

The net returns to physicians, after deduction of the expenses of professional fee practice, reveal similar geographic patterns, as shown in Table 19. Net earnings for Canada as a whole averaged \$23,262 in 1966, 5.4 p.c. higher than in 1965 and 59.4 p.c. higher than

in 1959. The highest provincial average net income was reported by Ontario physicians at \$25,456, followed by Alberta physicians at \$24,356; the lowest average net income was reported in Prince Edward Island.

19.—Average Gross and Net Professional Incomes of Physicians and Surgeons, by Province, Alternate Years 1959-66

Province or Territory	1959	1961	1963	1965	1966
GROSS PROFESSIONAL INCOMES¹					
	\$	\$	\$	\$	\$
Newfoundland ²	24,669	27,184	27,903	31,620	33,688
Prince Edward Island.....	18,854	20,001	23,413	25,596	26,284
Nova Scotia.....	21,341	23,242	23,455	27,486	29,960
New Brunswick.....	18,918	24,220	26,376	29,622	30,271
Quebec.....	18,721	22,118	25,748	29,010	30,901
Ontario.....	24,153	27,206	30,641	35,752	38,254
Manitoba ³	27,567	29,072	28,769	32,037	33,589
Saskatchewan.....	23,699	27,103	35,657	37,474	40,150
Alberta.....	25,254	29,221	30,912	35,397	37,871
British Columbia.....	26,628	27,867	27,670	31,675	36,063
Yukon and Northwest Territories ⁴	19,915	20,083	22,007	27,812	22,900
Average for Canada.....	22,910	25,862	28,690	32,799	35,223
NET PROFESSIONAL INCOMES⁵					
	\$	\$	\$	\$	\$
Newfoundland ²	16,776	18,640	19,455	23,028	23,304
Prince Edward Island.....	11,427	13,119	15,777	17,835	18,910
Nova Scotia.....	14,820	16,070	15,839	19,146	20,395
New Brunswick.....	12,372	16,288	17,701	20,251	20,807
Quebec.....	11,795	14,454	16,696	20,532	21,231
Ontario.....	15,605	17,682	20,492	24,188	25,456
Manitoba ³	15,442	15,829	18,178	19,681	21,565
Saskatchewan.....	15,096	15,843	21,625	23,530	24,274
Alberta.....	15,941	17,925	19,111	22,681	24,356
British Columbia.....	16,953	17,067	17,464	20,121	22,209
Yukon and Northwest Territories ⁴	16,271	15,594	16,480	15,731	13,039
Average for Canada.....	14,590	16,472	18,688	22,064	23,262

¹ Includes incidental wages and salaries.

² Excludes physicians employed on a salaried basis under the Cottage Hospital Medical Service and by subsidized voluntary prepayment plans. The estimated number of such excluded physicians in 1965 was 95.

³ Excludes some physicians employed on a salaried basis in private group-practice. The estimated number of such excluded physicians in 1965 was 57.

⁴ Data for the Yukon and Northwest Territories are posted for record only.

⁵ Includes net professional fees after deducting expenses of practice, and wages and salaries incidental to fee practice.

PART II.—WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income-maintenance measures such as the Canada Pension Plan, old age security pensions, the guaranteed income supplement program, family allowances, youth allowances and unemployment insurance, where nation-wide co-ordination is required, are administered federally. The Federal Government gives substantial aid to the provinces in meeting the costs of public assistance and also provides services for special groups such as veterans, Indians, Eskimos and immigrants. The Department of National Health and Welfare is generally responsible for federal welfare matters although the Departments of Veterans Affairs, Indian Affairs and Northern Development, and Manpower and Immigration operate programs for specific groups.

Administration of welfare services is primarily the responsibility of the provinces but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Co-ordination in welfare matters between different levels of government and between government and voluntary authorities is facilitated by the National Council of Welfare, an advisory body to the Minister of National Health and Welfare. The Council consists of the federal Deputy Minister of Welfare who acts as chairman, the provincial deputy ministers of Welfare, and ten other persons appointed for three-year terms by the Governor in Council.

Section 1.—Federal Government Programs

Subsection 1.—Canada Pension Plan

The Act establishing the Canada Pension Plan received Royal Assent on Apr. 3, 1965 and was proclaimed in force on May 5 of the same year. The collection of contributions commenced in January 1966, in January 1967 the first benefits were paid in the form of Retirement Pensions and in February 1968 the first survivors' benefits were paid. The Plan represents an important milestone in Canadian social development. It will enable millions of people to make financial provision for their retirement and to protect themselves and their dependants or survivors against loss of income in the event of the disability or death of the head of the family.

The Plan is universally applicable throughout Canada, except in the Province of Quebec where a comparable pension plan has been established. The Canada and Quebec Pension Plans, however, are closely co-ordinated and operate virtually as a single program. Together, they cover almost all members of the labour force in Canada. Benefit credits accrued under the Canada or Quebec Plans are portable throughout Canada. A contributor who may have worked for more than one employer during his lifetime or who may be self-employed for all or part of his working life will accumulate pension credits regardless of where he may work in Canada. In addition, benefits under the Plan are payable to beneficiaries whether or not they live in Canada. Every contributor to the Plan must have a Social Insurance Number so that his pensionable earnings may be accurately recorded for benefit purposes.

The maximum pensionable earnings for a year were \$5,000 for both 1966 and 1967, \$5,100 for 1968 and \$5,200 for 1969. From 1970 to 1975, the figure of \$5,200 will be adjusted in line with changes in the Pension Index which, in turn, is based on the Consumer Price Index. Beginning in 1976, the maximum pensionable earnings for a year will be adjusted in accordance with changes in the Earnings Index which will reflect changes in average wage and salary levels in Canada.

To participate in the Plan, a person must be between the ages of 18 and 70 and earn more than \$600 yearly as an employee, or at least \$800 if he is self-employed. As of 1969, contributions are made on earnings between \$600 and \$5,200 a year in the case of both employees and self-employed persons. Employees contribute at the rate of 1.8 p.c. and a matching contribution is made by their employers; self-employed persons contribute at the rate of 3.6 p.c. No contributions are to be made by persons while they are receiving disability pensions. Although contributions are made on annual earnings between \$600 and the maximums referred to above, rates of benefit are calculated on total earnings up to that maximum. That is, while contributions are not paid on the first \$600 of annual earnings, that amount is nevertheless included in the calculation of benefits.

The earnings-related component of the benefit which a person is entitled to receive under the Canada Pension Plan is based on the contributor's average pensionable earnings. Before this average is calculated, however, all earnings are adjusted in line with the applicable maximum on pensionable earnings during the benefit year. Thus, when a benefit first becomes payable, the earnings on which it is based are related to the maximum on pensionable earnings at that time rather than to the maximum when the earnings were received.

Benefits are classified under three main headings: Retirement Pensions; Survivors' Benefits, consisting of a widow's pension, a disabled widower's pension, orphans' benefits, and a lump sum death benefit; and Disability Pensions for contributors, with additional benefits for their dependent children.

In 1969, *Retirement Pensions* are payable to contributors who are 66 years of age or over provided that, if under age 70, they are retired from regular employment. From 1970 on, Retirement Pensions will be payable to contributors who have retired from regular employment at the age of 65. For contributors who have reached age 70, Retirement Pensions are payable regardless of whether or not they are retired. They become payable at their full rates beginning in January 1976. These rates amount to 25 p.c. of what the updated pensionable earnings of contributors have averaged since Jan. 1, 1966, or from age 18, whichever comes later.

Contributors who become eligible for Retirement Pensions prior to 1976 receive reduced amounts. In the calculation of retirement pensions that commence during this period, pensionable earnings are averaged over ten years or 120 months. The only exception is where a Disability Pension has been paid, in which case the time during which that pension was in pay is deducted from the ten years and the remaining period used for averaging purposes. In the calculation of Retirement Pensions that commence after 1975, provision is made to assist the contributor who may have had periods of low or no earnings during his contributory period. This is accomplished by dropping out the number of months during which contributions may have been made after age 65, and either by using the pensionable earnings in those months in place of earlier periods of lesser or no earnings, or by dropping such pensionable earnings out of the calculation if they are less favourable to him. Also dropped out of the calculation are up to 15 p.c. of the number of months he could have contributed before age 65 and the earnings in an equal number of months, although the drop-out must not reduce the number of months for averaging purposes to fewer than 120.

A person under 70 years of age who is in receipt of a Retirement Pension must meet an earnings test. In 1969, the maximum annual remuneration from employment he may earn without affecting the amount of his pension is \$900. Should his yearly earnings exceed this figure, his pension is reduced as follows: when employment earnings are between \$900 and \$1,500, the reduction will equal 50 p.c. of the amount over \$900, or an amount of up to \$300 per year; if earnings exceed \$1,500, the amount deducted will be \$300 plus the actual amount earned over \$1,500. However, the amount of pension is not subject to reduction for any month in which the pensioner does not earn over \$75. At age 70, a contributor is entitled to receive the full amount of his Retirement Pension regardless of the amount of his earnings.

Survivors' Benefits became payable in February 1968. They are paid to or on behalf of the survivors of a deceased contributor who has made contributions for the minimum qualifying period, which is three years for those whose benefits commence before 1975.

A woman who is widowed between ages 45 and 65 is entitled to a Widow's Pension consisting of the flat-rate payment plus $37\frac{1}{2}$ p.c. of her husband's Retirement Pension. The flat-rate component is equal to \$25 multiplied by the ratio of the Pension Index for the year in which the contributor dies to the Pension Index for 1967. Thus, for 1968, the flat-rate component was \$24.50 and for 1969 it is \$26.01. Should her husband not be in receipt of a Retirement Pension at the time of his death, such a pension is calculated in prescribed manner for the purposes of computing the amount of the Widow's Pension. If a woman is widowed under age 45, the same pension is paid provided she has dependent or disabled children or is herself disabled. If she does not meet any of these requirements, her pension is reduced by an amount equal to $1/120$ for each month she is less than age 45 at the time of her husband's death. Accordingly, if a woman is widowed at age 35 or less, and has no dependent or disabled children and is not herself disabled, she will not receive a Widow's Pension until she reaches 65 years of age, unless she becomes disabled in the meantime.

A widow aged 65 or over receives a Widow's Pension equal to 60 p.c. of her husband's Retirement Pension, regardless of her age at the time her husband died or whether she was receiving a Widow's Pension before she became 65. Again, if her husband was not in receipt of a Retirement Pension at the time of his death, one is calculated in prescribed manner in order to compute the amount of the Widow's Pension. Women who receive Widows' Pensions may also have contributed to the Canada Pension Plan themselves and consequently may be entitled to Retirement or Disability Pensions in their own right. In such cases, the Widow's Pension will be combined with the other pension, in accordance with a prescribed formula, but the combined total cannot exceed the maximum Retirement Pension payable under the Act.

Orphans' Benefits are payable on behalf of a deceased contributor's unmarried dependent children. The rate for each of the first four children is equal to the flat-rate component of the widow's pension (\$26.01 for 1969); for more than four children the total benefit, which is divided equally among the children, is the sum of \$26.01 for each of four and half of that amount for each child in excess of four. Benefits are payable until the child reaches age 18 or up to age 25 if he continues to attend school or university full time.

A Disabled Widower's Pension is payable where such person is wholly or substantially dependent on his wife for financial support at the time of her death. The test of disability is the same as that for a person who claims a Disability Pension and the pension formula is the same as that for a disabled widow.

When a contributor dies, a lump sum Death Benefit equal to six times his monthly Retirement Pension is paid to his estate. This benefit is subject to a maximum of 10 p.c. of the maximum on pensionable earnings which, for 1969, would mean a payment not exceeding \$520. Should a contributor not be in receipt of a Retirement Pension at the time of his death, a calculation is made in prescribed manner for purposes of establishing the amount of his Death Benefit.

Disability Pensions become payable in 1970. A contributor is considered to be disabled if he has a physical or mental disability that is so severe and likely to continue so long that he cannot regularly engage in any substantially gainful occupation. Disability Pensions, plus benefits for the dependent children of disabled contributors, are available provided contributions have been made to the Plan for the required minimum period, which is five years for contributors whose Disability Pensions will commence before 1976. The amount of the pension consists of a flat-rate payment equal to the flat-rate component of a widow's pension plus 75 p.c. of what the contributor's monthly Retirement Pension would have been had he reached age 65 when his Disability Pension commenced. Benefits are payable on behalf of a disabled contributor's dependent children at the same rates and under essentially the same circumstances as the orphan's benefits. All monthly benefits are adjusted upward annually if changes in the Pension Index warrant it. Benefits in payment in 1967 were increased by 2 p.c. effective January 1968 and those in payment in 1968 were increased by 2 p.c. effective January 1969.

Any contributor or beneficiary under the Plan has the right to appeal decisions with which he is dissatisfied. Appeals by employees and employers regarding coverage and contributions are first made to the Minister of National Revenue and, if the individual is not satisfied with the Minister's decision, he may appeal to the Pension Appeals Board whose decision is final. For self-employed persons, appeals with reference to the assessment of their earnings for Canada Pension Plan purposes are treated in the same way as appeals under the Income Tax Act. With respect to benefits, there is a three-stage appeal procedure: first, to the Minister of National Health and Welfare; secondly, to a Review Committee; and thirdly, to the Pension Appeals Board whose decision is final.

The legislation provides for the investment of the funds that accrue from monthly contributions, less the estimated amounts required to pay benefits and administrative costs over a three-month period. These funds are made available to each province on the basis of the relationship between the contributions made to the Plan by and on behalf of

residents of that province and the total contributions made to the Plan. Funds not borrowed by the provinces are invested in federal securities. The Canada Pension Plan is entirely self-supporting in that all benefits and all costs incurred in the administration of the program are financed solely from the contributions made by employees, employers and self-employed persons and the interest earned from the investment of funds.

An Advisory Committee representing employers, employees, self-employed persons and the public, which was established in 1967, reviews from time to time the operations of the Plan, the state of the investment fund, and the adequacy of coverage and benefits; its reports to the Minister of National Health and Welfare are included in the annual reports on the Plan. The legislation authorizes arrangements to be made with other countries to achieve as full coverage of persons in the labour force in Canada as is possible and to ensure the portability of pension credits between Canada and the countries concerned.

The Minister of National Health and Welfare is responsible for the administration of all parts of the program except coverage and the collection of contributions which come under the jurisdiction of the Minister of National Revenue. The Unemployment Insurance Commission is responsible for the assignment of Social Insurance Numbers and for the maintenance of the Central Index. The Department of Finance is responsible for the administration of the Canada Pension Plan Account and the Canada Pension Plan Investment Fund. The Office of the Comptroller of the Treasury, in addition to its statutory responsibility, is giving temporary assistance to the Department of National Health and Welfare in the operation of the electronic data processing service which is required to maintain the records of earnings of contributors and to calculate benefits payable under the Plan. The Chief Actuary, Department of Insurance, is responsible for the preparation of reports on the future financial progress of the Plan and on the effect on the Fund of proposed amendments to the Plan.

The Canada Pension Plan Administration of the Department of National Health and Welfare consists of a head office establishment in Ottawa and a network of 39 District Offices located in the major population centres in Canada outside the Province of Quebec and 103 local offices which operate on a part-time basis.

Subsection 2.—Old Age Security and Guaranteed Income Supplement

Old Age Security.—Under the Old Age Security Act of 1951, as amended, the Federal Government pays a monthly pension to all persons who meet the necessary residence and age qualifications. Prior to 1966, the pension was payable to those aged 70 or over but in 1966 a reduction in pensionable age from 70 to 65, to be completed over a five-year period, was begun. In 1969, the pension is payable to those aged 66 or over and from 1970 on it will be payable to those aged 65 or over. Until 1967 the pension amounted to \$75 a month but in 1968 and succeeding years the amount may be adjusted in line with changes in the Pension Index developed for the Canada Pension Plan (see p. 303). Accordingly, the pension was increased to \$76.50 a month in January 1968 and to \$78 a month in January 1969.

The old age security pension is payable to a person of attained age who has resided in Canada for ten years immediately preceding the approval of his application for the pension. Any gaps in the ten-year period may be offset if the applicant had been present in Canada in earlier years for periods of time equal in total to double the length of the gaps; in this case, however, the applicant must also have resided in Canada for one year immediately before his application for pension may be approved. The pension is also payable to persons of attained age who have left Canada before reaching that age but who have had 40 years of residence in Canada since age 18. A pensioner may absent himself from Canada and con-

tinue to receive payments. If he has lived in Canada for 25 years since his 21st birthday, payment outside of Canada may continue indefinitely; if not, payment is continued for six months, in addition to the month of departure, and is then suspended, to be resumed only with the month in which he returns to Canada.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital, to which application is made for pension. The regional office in Edmonton administers accounts for and receives applications from residents of the Yukon and the Northwest Territories. The Old Age Security plan is financed through a 3-p.c. sales tax, a 3-p.c. tax on corporation income and, subject to a limit of \$240 a year, a 4-p.c. tax on taxable personal income. The revenues from these sources are paid into a separate fund called the Old Age Security Fund, from which are paid the Old Age Security pensions and, from Jan. 1, 1967, benefits under the Guaranteed Income Supplement program.

Guaranteed Income Supplement.—A 1966 amendment to the Old Age Security Act provides for the payment of a monthly guaranteed income supplement to Old Age Security pensioners who have little or no income other than the pension. The supplement is limited to pensioners born on or before Dec. 31, 1910, who by reason of age are or will be unable to benefit substantially from the Canada or Quebec Pension Plans. The program commenced on Jan. 1, 1967. Beginning at that date, the maximum supplement was \$30 a month; in any year after 1967, it is to be 40 p.c. of the amount of the flat-rate Old Age Security pension. With the escalation of that pension effected January 1968, the maximum supplement was increased to \$30.60 a month and commencing January 1969 it was \$31.20 a month. Thus, pensioners with only the Old Age Security pension receive a guaranteed annual income of \$1,310 for a single pensioner and, for a married couple who are both pensioners, \$2,621. This consists of the monthly \$78 pension and the monthly supplement of \$31.20 which is subject to an income test. Pensioners with income in addition to their old age security pension may receive partial benefits.

The maximum supplement is reduced by \$1 a month for every full \$2 a month of income over and above the Old Age Security pension and any supplement that may have been received. Income for this purpose is the same as that computed in accordance with the Income Tax Act. In the case of a married couple, each is considered to have one half of their combined income. Where one spouse will not be receiving an Old Age Security pension at any time in the current year, six times the amount of the monthly Old Age Security pension is deducted from one half of the combined income in calculating the income of the pensioner for Guaranteed Income Supplement purposes. Payments will not be made to married couples unless both spouses submit returns. However, in order to prevent undue hardship when no statement of income is obtainable from one spouse, the other, in certain circumstances, may be deemed to be single for purposes of determining income. Furthermore, although marital status is determined as at Dec. 31 of the preceding year, even if this status should change in the current year, a special provision allows a person to be deemed either married or single in the preceding year.

If a pensioner who is in receipt of a supplement leaves Canada, the supplement will be paid for the month of departure and for six further months. Payment will then be discontinued until his return.

The Guaranteed Income Supplement program is administered in conjunction with the Old Age Security pension program. An application for the supplement is sent to each person when he begins to receive the Old Age Security pension and subsequently at the beginning of each calendar year. Entitlement is re-assessed each year on the basis of the pensioner's income in the preceding year.

**1.—Old Age Security and Guaranteed Income Supplement Statistics, by Province,
Year Ended Mar. 31, 1968 with Totals for 1966-68**

Province or Territory	Old Age Security		Guaranteed Income Supplement	
	Pensioners in March	Net Pensions Paid During Fiscal Year	Pensioners in March	Net Supplements Paid During Fiscal Year
	No.	\$	No.	\$
Newfoundland.....	25,865	23,971,795	21,165	4,873,628
Prince Edward Island.....	10,458	9,542,231	7,801	1,941,171
Nova Scotia.....	59,363	52,783,504	38,230	10,739,242
New Brunswick.....	44,390	39,418,789	28,691	8,026,962
Quebec.....	309,447	267,445,266	187,943	54,423,691
Ontario.....	507,341	412,802,015	215,229	84,127,095
Manitoba.....	78,147	66,781,367	44,323	13,587,590
Saskatchewan.....	77,725	66,153,435	40,564	13,463,882
Alberta.....	91,118	77,574,022	50,267	15,788,848
British Columbia.....	161,341	135,848,974	79,074	27,664,511
Yukon Territory.....	371	342,996	241	70,734
Northwest Territories.....	644	619,400	520	127,797
Canada.....	1968	1,366,210	1,153,283,794	714,648
	1967	1,229,561	1,033,408,230	505,210
	1966	1,105,776	927,299,487	...

¹ Three months; Guaranteed Income Supplement program commenced Jan. 1, 1967.

Subsection 3.—Family Allowances

The Family Allowances Act of 1944 assists in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances. The Province of Quebec introduced its own family allowances program, supplementing the federal scheme, under legislation enacted in 1967 (see p. 317).

Allowances are payable in respect of every child under age 16 who was born in Canada, or who has been a resident of the country for one year, or whose father or mother has been domiciled in Canada from a date three years immediately prior to the date of birth of the child. Payment is made by cheque each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are paid at the monthly rate of \$6 for each child under 10 years of age and \$8 for each child age 10 or over but under 16 years. If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school attendance legislation, who ceases to be maintained by a parent or who ceases to be a resident of Canada, or on behalf of a girl who is married and under age 16.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. The Regional Director located at Edmonton also administers the accounts of residents in the Yukon and Northwest Territories.

The Federal Government pays family assistance, at the rates applicable for family allowances, for each child under 16 years of age resident in Canada and supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returned to Canada to reside permanently. The assistance, which is payable monthly for the first year of the child's residence in Canada, is intended to bridge the gap until the child becomes eligible for family allowances. The eligibility requirements, other than that relating to residence, are the same for family assistance as for family allowances.

Newfoundland in 1966 introduced a program called the Parents' Supplement (Schooling Allowance), under which payments are made for children attending school (see p. 317).

2.—Family Allowances Statistics, by Province, Year Ended Mar. 31, 1968 with Totals for 1966-68

Province or Territory	Families Receiving Allowances in March	Children for Whom Allowances Paid in March	Average Number of Children per Family in March	Average Allowances ¹		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	\$	\$	\$
Newfoundland.....	72,041	210,812	2.93	19.70	6.73	16,983,302
Prince Edward Island.....	14,236	39,100	2.75	18.60	6.77	3,178,692
Nova Scotia.....	106,712	263,340	2.47	16.73	6.78	21,410,766
New Brunswick.....	84,108	227,747	2.71	18.37	6.79	18,595,852
Quebec.....	818,220	2,025,173	2.48	16.78	6.78	164,637,234
Ontario.....	1,029,734	2,329,769	2.26	15.30	6.76	187,635,949
Manitoba.....	131,098	312,777	2.39	16.12	6.76	25,432,808
Saskatchewan.....	131,164	326,957	2.49	16.90	6.78	26,710,541
Alberta.....	220,778	531,409	2.41	16.35	6.79	42,990,910
British Columbia.....	273,093	616,519	2.26	15.34	6.80	49,773,623
Yukon Territory.....	2,342	5,733	2.45	15.73	6.43	432,424
Northwest Territories.....	4,575	12,150	2.66	18.72	7.05	992,357
Canada.....1968	2,888,101	6,901,486	2.39	16.19	6.77	558,774,458
1967	2,833,941	6,882,874	2.43	16.42	6.76	555,794,947
1966	2,785,636	6,865,057	2.46	16.59	6.73	551,734,824

¹ Based on gross payment for March.

Subsection 4.—Youth Allowances

Legislation providing for a program of youth allowances became effective Sept. 1, 1964. The Federal Government does not provide youth allowances in Quebec, which has had its own program, called Schooling Allowances, since 1961. With the introduction of the federal scheme in 1964, the Province of Quebec agreed to make certain changes in its schooling allowances program so that it would be comparable with the federal measure. Since then, that province has been compensated by a tax abatement adjusted to equal the amount that the Federal Government would otherwise have paid in allowances to Quebec residents. The federal youth allowances and the Quebec schooling allowances programs cover all eligible young people in Canada.

Under the federal program, monthly allowances of \$10 are payable in respect of all dependent children aged 16 and 17 who are receiving full-time educational training or are precluded from doing so by reason of physical or mental infirmity. Both the parent or guardian and the child must normally be physically present and living in a province other than Quebec. The allowance is not payable to a parent who resides in Quebec or outside Canada, regardless of where his child may be attending school. However, a child may attend school in Quebec or outside Canada, or, if disabled, receive care or training in Quebec or outside Canada and still be considered eligible, on the basis that he is a resident of a province other than Quebec but is temporarily absent.

Allowances normally commence with the month following that in which family allowances cease and continue until the school year terminates. They are paid retroactively for the summer months when the child returns to school at the commencement of the new school year, although allowances for a disabled child not attending school are payable continuously throughout the year. Should a student leave school, leave the country permanently, cease to be maintained, take up residence in Quebec, or die, the allowance ceases. Otherwise, the youth allowance continues until the end of the month in which the young person reaches age 18. Youth allowances are considered not to be income for any purpose of the Income Tax Act.

The program is administered by the Department of National Health and Welfare. The National Director of the family allowances and old age security programs is also responsible for administering youth allowances, assisted by regional directors located in each of the provincial capitals other than Quebec City. The costs of youth allowances are met from the Consolidated Revenue Fund.

3.—Youth Allowances Statistics, by Province, Year Ended Mar. 31, 1968 with Totals for 1966-68

Province or Territory	Youths for Whom Allowances Paid in March			Net Total Allowances Paid during Fiscal Year
	Attending School Full-Time	Having Physical or Mental Infirmary	Total Youths	
	No.	No.	No.	\$
Newfoundland.....	15,867	157	16,024	1,747,142
Prince Edward Island.....	3,347	33	3,380	392,096
Nova Scotia.....	23,518	155	23,673	2,697,524
New Brunswick.....	20,689	151	20,840	2,361,241
Ontario.....	207,176	1,399	208,575	23,763,161
Manitoba.....	28,708	125	28,833	3,293,702
Saskatchewan.....	30,424	86	30,510	3,487,264
Alberta.....	44,934	195	45,129	5,148,230
British Columbia.....	56,731	208	56,939	6,462,040
Yukon Territory.....	280	—	280	29,340
Northwest Territories.....	377	5	382	45,240
Canada.....	432,051	2,514	434,565	49,426,980
1967.....	409,691	2,530	412,121	47,395,633
1966.....	402,802	1,992	404,794	46,468,550

Section 2.—Federal-Provincial Programs

Subsection 1.—Canada Assistance Plan

The Canada Assistance Plan was enacted in 1966 as a comprehensive public assistance measure to complement other income security measures. It provides, under agreements with the provinces, federal contributions of 50 p.c. of the costs of assistance to persons in need and of the costs of certain welfare services. The Plan is designed to replace the Unemployment Assistance Act, 1956, although the latter will continue in effect in some provinces for an interim period with respect to certain programs that utilize a means test and are not covered under the Canada Assistance Plan. All provinces had signed agreements under the Plan by the end of August 1967. The arrangements for contracting out of certain shared-cost programs that were introduced in 1965 under the Established Programs (Interim Arrangements) Act are applied to Quebec's agreement. It is provided that the provinces may discontinue their programs of old age assistance, blind persons allowances and disabled persons allowances and instead give aid under their general programs with costs shared under the Plan. By mid-1968, five provinces had taken advantage of this provision and had discontinued receipt of applications under the old age assistance and disabled persons allowances programs; three of these had also discontinued receipt of applications under the blind persons allowances program.

The Plan extends federal sharing to include the following costs, which were not shared under the Unemployment Assistance Act: assistance to needy mothers with dependent children, maintenance of children in the care of provincially approved child welfare agencies, health care services to needy persons, and the extension of welfare services to prevent or remove causes of dependency or to assist recipients in achieving self-support. The only eligibility requirement specified is that of need, which is determined through an assessment of budgetary requirements as well as of income and resources. A province must not require previous residence as a condition of eligibility for assistance or for continued assistance;

rates of assistance and eligibility requirements are set by the province so that they may be adjusted to local conditions and the needs of special groups; and the provinces must establish procedures for appeal from decisions that relate to the provision of assistance.

The Federal Government reimburses the provinces for 50 p.c. of the cost of assistance provided to persons in need and for 50 p.c. of certain costs of improving or extending welfare services. "Assistance" includes any form of aid to or on behalf of persons in need for the purpose of providing basic requirements such as food, shelter and clothing; items necessary for the safety, well-being or rehabilitation of a person in need, or for a handicapped person; special home care such as a home for the aged, a nursing home or a welfare institution for children; travel and transportation; funerals and burials; health care services; welfare services purchased by or at the request of provincially approved agencies; and comfort allowances for inmates of institutions.

The cost of improving and extending welfare services may be calculated either (1) as the amount by which the cost of providing welfare services exceeds that of the period from Apr. 1, 1964 to Mar. 31, 1965 or (2) as the cost of employing persons who are engaged wholly or mainly in the performance of welfare service functions and who are employed in positions filled after Mar. 31, 1965. Included for sharable purposes are the costs of salaries and employee benefits, travel, research, consultation, fees for conferences and seminars, and certain costs of staff training. The sharing of cost of work activity projects that prepare persons for employment and the extension of provincial welfare services to Indians on reserves, on Crown lands or in unorganized territory are governed by special agreements.

4.—Federal Share of Canada Assistance Plan Costs, by Province, Year Ended Mar. 31, 1968

NOTE.—Includes costs of public assistance payments, child welfare maintenance, health care and extensions and improvements in welfare services and also payments made for claims received in 1967-68 covering expenditures made in 1966-67.

Province	Amount	Province	Amount
	\$		\$
Newfoundland.....	17,901,873	Manitoba.....	15,571,938
Prince Edward Island.....	1,738,858	Saskatchewan.....	13,403,926
Nova Scotia.....	10,263,995	Alberta.....	26,538,313
New Brunswick.....	7,185,018	British Columbia.....	32,719,712
Quebec.....	1		
Ontario.....	100,287,774	Totals.....	225,611,407

¹ Payments to Quebec are made by the Department of Finance under the terms of the Established Programs (Interim Arrangements) Act under which compensation is provided in the form of a tax abatement and equalization payment.

Subsection 2.—Unemployment Assistance

Under the Unemployment Assistance Act 1956, as amended, the Federal Government was authorized to enter into an agreement with any province to reimburse it for 50 p.c. of the unemployment assistance expenditures made by the province and its municipalities to persons and their dependants who are unemployed and in need. Payments to both employable and unemployable persons are sharable, as are the costs of maintaining persons in homes for special care, and the costs of supplementary aid to recipients of old age security pensions, old age assistance, blind persons allowances, disabled persons allowances and unemployment insurance benefits where the amount of assistance is determined on the basis of need. Federal sharing was extended to mothers' allowances from Apr. 1, 1966. Effective from Apr. 1, 1965, Quebec received partial payment for assistance costs under the Established Programs (Interim Arrangements) Act under which the province is entitled to compensation in the form of a tax abatement and an equalization payment.

All programs under which aid is based on a needs test are included for reimbursement under the Canada Assistance Plan under which all provinces had signed agreements by August 1967. The Unemployment Assistance Act, however, remains in effect in the Yukon

and Northwest Territories and for a transitional period in some provinces to cover the costs of aid to residual groups of persons under certain means-test programs during the process of conversion to needs-test programs (see p. 310). The federal share of unemployment assistance costs for the year ended Mar. 31, 1967, amounted to \$141,633,582. In the following fiscal year the federal share was reduced to \$26,000,000 as claims under the Canada Assistance Plan became effective.

Subsection 3.—Old Age Assistance and Blind and Disabled Persons Allowances

Federal reimbursement to the provinces for assistance to persons aged 65 or over, to blind persons aged 18 or over and to persons permanently and totally disabled aged 18 or over are provided for under the Old Age Assistance Act of 1951, as amended, the Blind Persons Allowances Act, 1951, as amended, and the Disabled Persons Allowances Act, 1954, as amended. To be eligible for an allowance under any of these Acts, an applicant must meet the 10-year residence requirement and the income requirements. Under the Old Age Assistance Act and the Disabled Persons Allowances Act the total income, including the allowance, may not exceed \$1,260 a year for an unmarried person, \$2,220 a year for a married couple or \$2,580 a year for a married couple when the spouse is blind within the meaning of the Blind Persons Act. Under the latter Act total income, including the allowance, may not exceed \$1,500 a year for an unmarried person, \$1,980 a year for a person with no spouse but with one or more dependent children, \$2,580 for a married couple and \$2,700 a year for a married couple when the spouse is also blind.

A recipient of old age assistance is transferred to old age security on reaching the eligible age for it, which in 1968 was 67 years (see p. 306). This program will disappear when the eligible age for old age security is lowered to 65 years.

The federal contribution may not exceed 50 p.c. of \$75 a month or the allowance paid, whichever is less, for the old age assistance and disabled persons allowances, or 75 p.c. of \$75 a month of the allowance paid, whichever is less, for blind persons allowances.

Effective Apr. 1, 1965, Quebec withdrew from these federal-provincial programs under the terms of the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abatement and an equalization payment.

5.—Statistics of Old Age Assistance and Blind and Disabled Persons Allowances, by Province, Year Ended Mar. 31, 1968 with Totals for 1966-68

Province or Territory	Old Age Assistance			Allowances for the Blind			Allowances for Disabled Persons		
	Reci- pients in Month of March	Aver- age Monthly Assist- ance	Federal Contri- bution during Year	Reci- pients in Month of March	Aver- age Monthly Allow- ance	Federal Contri- bution during Year	Reci- pients in Month of March	Aver- age Monthly Allow- ance	Federal Contri- bution during Year
	No.	\$	\$	No.	\$	\$	No.	\$	\$
Newfoundland.....	844	66.24	985,356	417	73.18	285,162	1,393	74.43	465,500
Prince Edward Island.....	206	70.60	205,734	69	73.72	45,639	78	72.08	176,869
Nova Scotia.....	1,879	66.20	1,089,056	636	73.28	440,422	3,482	73.53	1,564,079
New Brunswick.....	1,957	71.27	1,139,781	536	73.52	371,888	2,265	74.33	1,015,796
Ontario.....	1,340	59.47	1,366,432	435	54.27	259,748	2,401	64.97	1,096,998
Manitoba.....	1,647	67.49	1,038,975	294	71.91	200,718	1,498	73.64	671,508
Saskatchewan.....	39	58.53	295,865	131	68.86 ¹	110,352	272 ¹	69.01 ¹	129,610 ¹
Alberta.....	1,710	66.08	1,256,491	376	73.02	258,007	1,925	72.75	844,821
British Columbia.....	2,377	70.54	1,520,674	451	73.81	315,769	2,445	73.59	1,086,330
Yukon Territory.....	9	75.00	5,725	6	75.00	3,460	3	75.00	1,350
Northwest Territories....	75	73.09	46,418	33	74.24	23,083	27	73.10	11,097
Canada.....	12,083	66.94	8,950,507	3,384	70.82	2,314,248	15,789	72.26	7,063,958
1967	35,546	68.52	19,750,744	5,022	70.94	3,377,418	34,590	73.57	15,026,378
1966	52,988	68.85	26,980,510	5,437	71.05	3,632,212	34,588	73.51	14,979,430

¹ Most recipients transferred to provincial social assistance program.

Under the terms of the Canada Assistance Plan a province may elect to aid needy persons of age 65 or over, the blind or disabled under a general assistance program with costs shared under the Canada Assistance Plan (see p. 310). In accordance with this provision a number of provinces no longer accept applications under these programs. They may also transfer current recipients to their general programs provided there is no decrease in benefits. By mid-1968, Ontario, Saskatchewan and Alberta had discontinued applications under the three programs, and Newfoundland and Prince Edward Island had discontinued receipt of applications for old age assistance and disabled persons allowances.

Subsection 4.—Fitness and Amateur Sport Program

The Fitness and Amateur Sport Act of 1961 provides up to \$5,000,000 a year to be spent on the encouragement, promotion and development of active leisure pursuits for everyone in Canada. Although the federal, provincial and municipal governments provide the funds and resources, the programs are carried out almost entirely by non-governmental agencies. Under the Act, Canadian participation in active recreation and amateur sport can be promoted internationally, nationally, provincially and locally through financial assistance, technical guidance, the provision of teaching materials, assistance to training, research and the construction of facilities. The National Advisory Council of Fitness and Amateur Sport advises the Minister of National Health and Welfare in fitness and amateur sport matters; its 30 members are chosen for their interest and experience, with at least one member from each province.

The federal program has five elements. *Grants to National Organizations*, totalling more than \$1,000,000 a year, go to some 50 national fitness and sports organizations to help to train coaches, to improve standards of instruction, to increase participation in sports, to aid the holding of national and regional competitions and to assist Canadian athletic teams at international competitions. *Grants for Athletic Events* assist in the holding of sports events of nation-wide interest. *Grants for Training and Research* are made for graduate study in fitness and amateur sport, for research fellowships, and for scholarships and bursaries for undergraduate study in physical education and recreation. *Services of the Department of National Health and Welfare* include the provision of technical advice, training material and promotional aids. Committees of the National Advisory Council meet frequently with the executives of sports organizations to discuss policy and a federal-provincial committee of government officials advises on and co-ordinates governmental aspects of the program. The Department also co-ordinates work done by other federal agencies in fitness and amateur sport. *Grants to the Provinces* of \$1,000,000 a year are made to those that enter into cost-sharing agreements for provincial programs of fitness and amateur sport. The Federal Government meets 60 p.c. of the cost of projects and the full cost of the undergraduate scholarships and bursaries. Applications for all grants at the provincial or local level are made in the first instance to the responsible provincial department. Most of the ideas for recreational activities and plans originate in the municipal recreation departments where the needs of the individual communities are best known.

Subsection 5.—National Welfare Grant Program

The National Welfare Grant Program was established in 1962 to help develop and strengthen welfare services in Canada through a general welfare and professional training grant and a welfare research grant. The variety of provisions within the program, along with its associated consultative services, allow it to operate as a flexible instrument in the development of welfare services and to give a major emphasis to experimental activities in the welfare field.

The allotment for the year ended Mar. 31, 1969 was \$2,450,000. Provincial governments, municipal welfare departments, non-governmental welfare and correctional agencies, universities and individuals may be the ultimate recipients of project grants under one or

more provisions of the program. Some are financed and administered entirely by the Federal Government; others require application through a provincial department of welfare that actually administers the award on a shared-cost basis.

General welfare, bursary, training and staff development grants are available to provinces on a shared-cost basis for projects designed to improve welfare administration, to develop provincial consultative and co-ordinating services, and to strengthen and extend public and voluntary welfare services; for bursaries for full-time graduate training at Canadian schools of social work; and for staff training and development grants for employees of government and voluntary welfare agencies where the costs are not sharable under the Canada Assistance Plan. The other provisions of the program are administered by the Federal Government. Welfare scholarships are awarded for graduate study in Canadian schools of social work and fellowships for advanced study at Canadian and foreign universities. Teaching and field instruction grants assist with the development of new Canadian schools of social work and with certain operating costs at existing schools.

Under the welfare research grant, funds are provided for a variety of research projects undertaken by public and voluntary welfare and correctional agencies, universities and research institutions. Grants are available to national voluntary welfare agencies to assist with projects not eligible for support under other provisions of the program.

Effective Apr. 1, 1967, a mental retardation grant was established for a five-year period and is being administered in conjunction with the National Welfare Grant Program. It supports research and demonstration projects designed to expand knowledge and to apply that knowledge to the provision of services and to preventive programs in that field.

Expenditures under the National Welfare Grant Program for the year ended Mar. 31, 1968 totalled \$1,886,730 and under the Mental Retardation Grant, \$133,407. Of the former, \$328,314 was expended on research projects; \$610,404 on teaching and field instruction, welfare scholarships and fellowships; \$237,114 on national agency projects; and \$710,898 on welfare demonstration and general welfare projects, including provincially administered bursary and staff development programs.

Subsection 6.—Vocational Rehabilitation

The federal-provincial vocational rehabilitation program, which began in 1952, was consolidated and extended under the Vocational Rehabilitation of Disabled Persons Act, 1961. Agreements under this Act provide for equal sharing of costs between the Federal Government and the provinces. These costs include co-ordination and provision of services to disabled or other vocationally disadvantaged individuals, training of rehabilitative personnel, and research and publicity. Approved services supplied by a provincial government or purchased from voluntary agencies by a provincial government include medical, social and vocational assessment, intensive counselling, restorative services, the provision of prostheses, vocational or educational up-grading, rehabilitation allowances, work conditioning, and provision of tools, books and other equipment. Employment counselling and placement are provided through the Canada Manpower Centres of the Department of Manpower and Immigration.

In each participating province a provincial co-ordinator or director of rehabilitation is responsible for the co-ordination and administration of services to disabled or vocationally disadvantaged persons. The federal aspects of the program are administered by the Manpower Utilization Branch of the Department of Manpower and Immigration in co-operation with the Department's five regional offices. The Manpower Utilization Branch, through its section on Older Workers, also has the function of encouraging a more favourable employment climate for older workers through a continuing educational program, encouragement of research, maintenance of liaison with management, labour and voluntary agencies, assembly and dissemination of informational material, and supportive services to the Canada Manpower Centres. Among other agencies contributing to vocational rehabilitation are the Workmen's Compensation Boards in all provinces, which provide for the rehabilitation of injured workmen.

In the year ended Mar. 31, 1968, federal expenditures under the vocational rehabilitation program totalled \$2,157,894. Reports were received on 2,995 disabled or vocationally disadvantaged persons rehabilitated to employment during the year. Before rehabilitation the cost of supporting these people and their dependants was an estimated \$3,200,000 annually; after rehabilitation their estimated annual earnings were \$8,600,000.

Section 3.—Provincial Welfare Programs

Major welfare programs governed by provincial legislation include social assistance and social allowances, mothers' allowances, services for the aged, and child welfare services. Also, the Province of Quebec operates the Quebec Pension Plan, which is comparable to the Canada Pension Plan (see p. 303), and has also enacted in 1967 its own family allowances program (see p. 317). In most provinces, responsibility for a number of the programs is shared by the provinces and their municipalities. Provincial administration is carried out through the department of public welfare in each province; several departments have established regional offices to facilitate administration and to provide consultative services to the municipalities.

The provincial departments of public welfare are placing increasing emphasis on standards of administration and on rehabilitative services for social assistance recipients, and now share with the municipalities the costs of preventive and rehabilitative welfare services.

Public services are supplemented by those of voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups and released prisoners. Welfare councils and social planning councils contribute to the planning and co-ordinating of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although their main support is usually from united funds or community chests, or from sponsoring organizations.

Subsection 1.—Social Assistance

All provinces make legislative provision for assistance to persons in need and their dependants. With the exception of Quebec, all provinces have now incorporated provisions for allowances to needy mothers with dependent children in a broadened program of provincial allowances to several categories of persons with long-term need or in a general program under which the only eligibility requirement is need, irrespective of the cause of need.

In addition to allowances to cover items of basic need, such as food, clothing, shelter, fuel and utilities, all provinces make provision for such special items as rehabilitation services, expenses incidental to education or obtaining employment, counselling, homemakers services and institutional care. The provinces are reimbursed by the Federal Government under the Canada Assistance Plan for 50 p.c. of the costs of assistance and of certain welfare services given by the provincial and municipal authorities (see p. 311). The provincial departments of public welfare set rates of assistance and conditions of eligibility; they have regulatory and supervisory powers over municipal administration of assistance, and require certain standards as a condition of provincial aid. Length of residence is not a condition of aid in any province, but in four provinces municipal residence determines the financially responsible authority. The provincial authority takes responsibility for aid in unorganized areas within the province and for persons who lack municipal residence.

The administration of assistance varies. In five provinces allowances to persons with long-term need, such as needy mothers with dependent children, disabled persons and the aged, are administered by the province and other allowances are administered by the municipalities. In Newfoundland and New Brunswick all assistance is administered by the provincial authority. In Prince Edward Island assistance is administered by the province and two of the larger municipalities. In Saskatchewan and British Columbia compre-

hensive programs of general assistance are administered by the local authority, i.e., by the municipalities except in sparsely populated municipalities and in areas without municipal organization where aid is administered by the province. British Columbia also administers a program of supplementary allowances to needy recipients of Old Age Security pensions and the three federal-provincial categorical allowances. In the eight provinces where the municipalities have some administrative responsibility, the proportion of the costs of aid borne by the province varies from 40 p.c. to 100 p.c.

Subsection 2.—Living Accommodation for Elderly Persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions or public health. Voluntary homes are usually provincially inspected and in some provinces must be licensed.

All provinces in varying degrees make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations; and, generally speaking, such homes are exempt from municipal taxation. Some provinces also make provision for capital grants to municipalities, charitable organizations or non-profit corporations for the construction of low-rental housing for elderly persons. These projects are usually built under Sect. 16 of the National Housing Act, which provides for long-term low-interest loans to non-profit corporations constructing low-rental self-contained or hostel accommodation for older people. Units for the aged may also be included in low-rental public housing projects for families, built under Sect. 35 of the Act. One province pays annual maintenance grants in respect to each self-contained housing unit and for each bed in an approved special-care home operated under municipal, charitable, or non-profit corporation auspices.

In some provinces efforts are made to place well, elderly people in small proprietary boarding homes. Those who are chronically ill may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged. All provinces contribute to the maintenance of needy persons in homes for the aged or other homes for special care, and these costs are shared by the Federal Government under the Canada Assistance Plan (see pp. 310-311).

Subsection 3.—Child Welfare Services

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation. The program may be administered by the provincial authority or the responsibility may be delegated to local children's aid societies (voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments). In Newfoundland, Prince Edward Island, New Brunswick, Saskatchewan and Alberta, child welfare services are administered by the province; in Quebec they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario, a network of local children's aid societies is responsible for the services; in Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. The costs of certain services and maintenance costs for children in care of a voluntary or public agency, formerly borne by the province or partly by the municipality of residence and partly by the province, are sharable with the Federal Government under the Canada Assistance Plan (pp. 310-311).

Child welfare agencies, provincial or voluntary, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a

judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents under supervision, or be made a ward of the province or a children's aid society. Services are provided as appropriate and include services to children in their own homes, care in foster boarding homes or adoption homes or, for children who need it, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Adoptions, including those arranged privately, number about 16,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may need preparation for placement in foster homes, and emphasis is increasingly being placed on group-living homes. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, is of particular significance. Institutions for children are governed by provincial child welfare legislation and by provincial or municipal public health regulations; they are generally subject to inspection and in some provinces to licensing.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. Support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Day nurseries for the children of working mothers are established only in the larger centres. These are chiefly under voluntary auspices, except in Ontario, where there are also municipally sponsored day nurseries operated with the aid of provincial grants.

Subsection 4.—Newfoundland's Schooling Allowances Program

The Province of Newfoundland introduced its Parents' Supplement (Schooling Allowance) program in 1966. Under this scheme, an annual benefit of \$15 is paid in semi-annual instalments for each eligible child who is registered at and attending a school other than a trade school or university. There is no age limit specified in the legislation but the allowance terminates when the child leaves school.

Subsection 5.—Quebec's Family Allowances Program

The Province of Quebec introduced its own family allowances program under legislation enacted in 1967. Under this plan, the following allowances are paid at the end of each six-month period to persons satisfying the relationship and residence requirements in respect of children under 16 years of age: \$15 for one child, \$32.50 for two children, \$52.50 for three children, \$77.50 for four, \$107.50 for five, \$142.50 for six, and an extra \$35 for each child after the sixth. These allowances are increased by \$5 for each child between the ages of 12 and 16 years. To qualify for the allowances, children must be attending school regularly from the time when they are first required to do so, unless prevented by physical or mental infirmity. These allowances supplement those paid under the federal scheme.

Section 4.—Emergency Welfare Services

The function of the Emergency Welfare Services Division of the Department of National Health and Welfare is to develop community capability to provide, in the event of a national emergency, essential welfare services not available through established welfare agencies. A 1959 Order in Council set up five emergency welfare services—emergency clothing, emergency feeding, emergency lodging, registration and inquiry, and personal

services—and gave the Division responsibility for the continuation of welfare departments in support of rehabilitation and recovery. To these ends, policy has been defined, systems designed and, at all levels of government, welfare resources planned.

In peacetime, trained specialists within the federal, provincial and municipal departments of welfare, organized nationally, are responsible for developing an emergency welfare capability. The program is an integral part of the Canada Survival Plan and is co-ordinated with the programs of other Canadian Government agencies and with mutual support programs of the Welfare Administration of the United States Department of Health, Education and Welfare. Leaders are being trained in the art of organizing large numbers of volunteers for emergency welfare operations and a public education program is being maintained. Special printed forms and equipment for survival, not regularly available through commercial sources, have been produced and are located strategically across Canada.

Section 5.—International Welfare*

Canada is actively involved in the social welfare and social development activities of the United Nations and its specialized agencies and of various international voluntary organizations. At the United Nations, Canada is represented on the Commission for Social Development, is a member of the governing bodies of the United Nations Children's Fund (UNICEF) and the International Labour Organization, and actively participates in the work of a number of related organizations such as the Society for International Development, the International Council on Social Welfare, and the International Social Security Association. The Department of National Health and Welfare provides representatives to such organizations, participates in international studies, and contributes to the development of Canadian policy in this sector.

Under the program of the Canadian International Development Agency, Canada supports a number of social welfare projects in developing regions and provides social work and social welfare training for foreign students recommended by their governments. The necessary technical services to the bilateral and multilateral aid programs in this sector are supplied by the Department of National Health and Welfare, which works closely with several Canadian voluntary organizations engaged in social development. Canada also has reciprocal agreements on social security programs with a number of countries. The Departments of External Affairs, of National Health and Welfare and of Finance are the federal agencies normally engaged in the negotiation of these agreements.

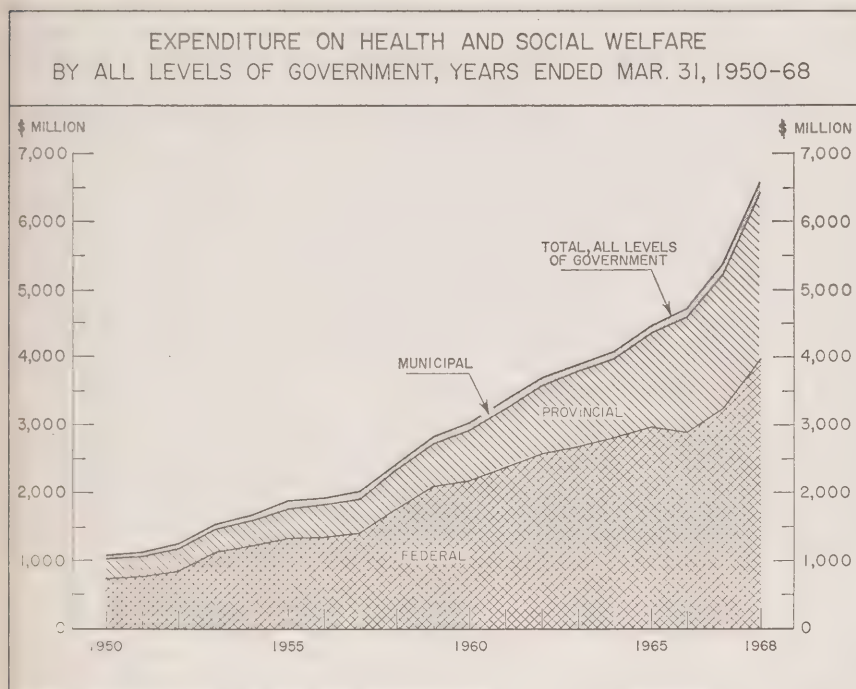
PART III.—HEALTH AND SOCIAL WELFARE EXPENDITURES

Section 1.—Government Expenditures on Health and Social Welfare

In the seven years ended Mar. 31, 1968, expenditures by all levels of government on health and social welfare rose from \$3,689,200,000 to an estimated high of \$6,553,100,000, an increase of over 75 p.c. If these figures are adjusted to take account of the growth in population, the increase in per capita expenditures—from \$201 to \$321—was about 60 p.c. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual government expenditures on health and social welfare over the 1962-68 period remained relatively stable, fluctuating between 11.8 p.c. and 13.9 p.c. of net national income and between 8.8 p.c. and 10.4 p.c. of gross national product; for the year ended Mar. 31, 1968, the values are estimated to be 13.9 p.c. and 10.4 p.c., respectively, the highest proportions ever reached in recent history.

The federal share of health and social welfare expenditures fell from 69.9 p.c. in 1961-62 to 60.8 p.c. in 1967-68, the provincial share rose from 27.2 p.c. to 37.0 p.c. and municipal outlays declined from 2.9 p.c. to 2.2 p.c. Compared with the previous year, 1966-67,

* See also pp. 135-141.



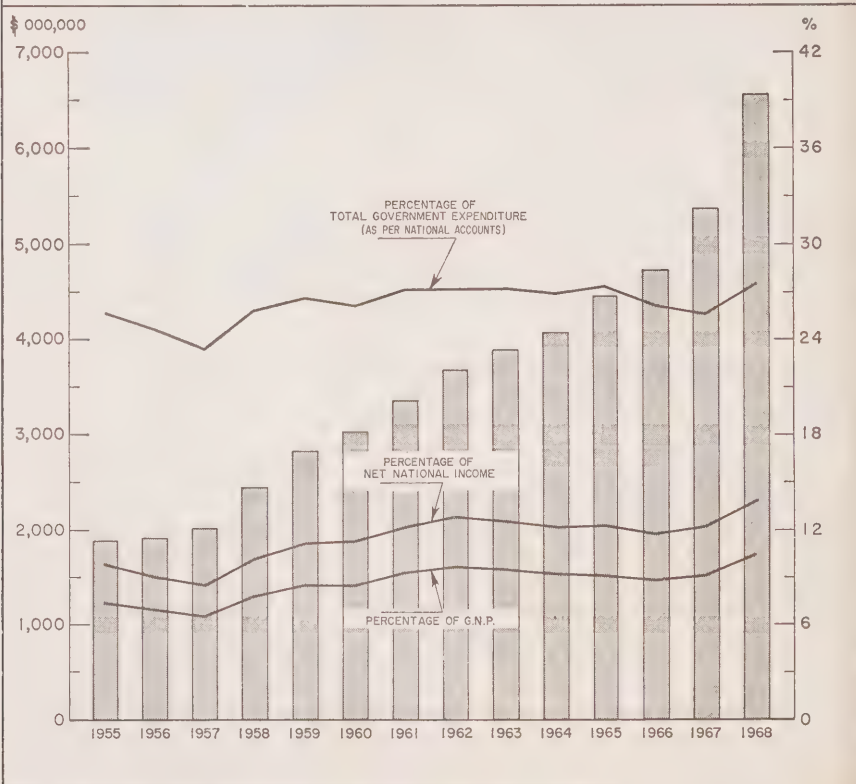
health and social welfare expenditures by all levels of government increased by \$1,177,500,000 or 22 p.c. In the federal field the increase amounted to 23 p.c. and showed the greatest gain. The main items causing this rise included higher disbursements under the Old Age Security program principally because of the lowering of the eligible age, the commencement of the Guaranteed Income Supplement program effective Jan. 1, 1967, the greater expenditure incurred by the introduction of the Canada Assistance Plan which is wider in scope than the categorical programs it is intended to replace, higher expenditures under the Unemployment Insurance Act, greater outlays on behalf of health and welfare for the Indian and Eskimo populations, increasing expenditures under the Hospital Insurance and Diagnostic Services Act, and contributions to the provinces under the Health and Hospital Construction Grants and the new Health Resources Fund Act. Provincial expenditures rose by 21 p.c. and those of municipal governments by 8 p.c.

The relative federal declines compared to provincial gains in each of the three years up to 1966-67 were caused to a substantial degree by increasing hospital expenditures by the provincial governments, augmented by the effect of the 'opting out' arrangements made available to the provinces: under the Established Programs (Interim Arrangements) Act, a province may opt out of federal-provincial programs, operate and finance these as provincial schemes and receive contributions from the Federal Government in the form of a tax abatement and an equalization payment in lieu of a direct federal contribution to the program. The opting-out arrangements have the effect of showing an increase in provincial government expenditures while the federal fiscal payment is treated not as an expenditure but as a transfer payment. Thus, provincial expenditures include gross outlays by Quebec whereas the federal expenditures on health and social welfare do not include the large sums

paid or transferred to that province under the Established Programs (Interim Arrangements) Act and other fiscal arrangements. However, the downward trend in Federal Government expenditures on social security was reversed in 1967-68 and showed the greatest gain of all levels of government over the previous year.

The proportion of government expenditures on health and social welfare taken up by health programs continues to grow; in 1961-62 such programs accounted for \$1,126,000,000 or 30 p.c. of the total and in 1967-68 for \$2,454,500,000 or 37 p.c. An outline of the principal components for 1967-68 shows the magnitude of the major programs and services—Family Allowances payments amounted to \$559,000,000, Old Age Security payments to \$1,153,000,000 plus another \$235,000,000 under the Guaranteed Income Supplement program, Unemployment Insurance benefits to \$389,000,000, and veterans pensions and allowances to \$206,000,000 and \$105,000,000, respectively. These income-maintenance programs were entirely the responsibility of the Federal Government. In addition, payments under the Youth Allowances program, which commenced in September 1964, amounted to \$49,000,000, excluding the Province of Quebec. That province had instituted a program of schooling allowances three years prior to the introduction of the federal

EXPENDITURE ON HEALTH AND SOCIAL WELFARE BY ALL LEVELS OF GOVERNMENT WITH PERCENTAGES OF TOTAL GOVERNMENT EXPENDITURE, NET NATIONAL INCOME AND GROSS NATIONAL PRODUCT, YEARS ENDED MAR. 31, 1955-68



program and this necessitated a special arrangement whereby Quebec continued its program but with appropriate fiscal arrangements with the Federal Government. In 1967-68, Quebec inaugurated its own family allowances program (see p. 317).

Federal-provincial income-maintenance programs in 1967-68 required expenditures of \$36,000,000 for old age assistance, \$5,000,000 for blindness allowances, \$31,000,000 for disabled persons allowances and \$41,000,000 for unemployment assistance, the latter including some municipal expenditures. In 1965 Quebec withdrew from these federal-provincial programs under the Established Programs (Interim Arrangements) Act, which entitled that province to a tax abatement as an equalization payment. Canada Assistance Plan expenditures in 1967-68 were estimated to be \$690,000,000 (this program was designed to replace the Unemployment Assistance Act, old age assistance, blind persons allowances and disabled persons allowances programs at the option of each province, as described on pp. 310-311). Workmen's Compensation Boards spent an estimated \$175,000,000 on cash benefits for pensions and compensation. Welfare services for Indians and for veterans and the national employment service accounted for approximately \$93,000,000 at the federal level.

In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled almost \$470,000,000 and grants for hospital construction and general health grants to the provinces and municipalities amounted to \$46,000,000. The Federal Government spent \$40,000,000 on its Indian and northern health services and \$63,000,000 on hospital and treatment services for veterans. Provincial expenditures on hospital care were estimated at \$1,300,000,000 and expenditures on other health services at \$300,000,000. Workmen's Compensation Boards paid an estimated \$75,000,000 for medical aid and hospitalization, and municipal governments spent \$75,000,000 on health.

1.—Total, Per Capita and Percentage Distribution of Government Expenditures on Health and Social Welfare, by Level of Government, Years Ended Mar. 31, 1962-68

Year Ended Mar. 31—	Federal	Provincial	Municipal	Total
TOTAL EXPENDITURES				
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1962.....	2,577.1	1,004.3	107.8	3,689.2
1963.....	2,683.5	1,097.7	117.3	3,898.5
1964.....	2,801.0	1,166.8	101.2	4,069.1
1965.....	2,969.7	1,376.1	108.2	4,454.0
1966.....	2,883.5	1,708.2 ¹	120.0 ¹	4,711.7
1967.....	3,243.1	2,002.5 ¹	130.0 ¹	5,375.6
1968 ¹	3,986.5	2,426.6	140.0	6,553.1
PER CAPITA EXPENDITURES				
	\$	\$	\$	\$
1962.....	137.94	53.75	5.77	197.46
1963.....	141.14	57.74	6.17	205.05
1964.....	144.67	60.27	5.23	210.17
1965.....	150.63	69.80	5.49	225.92
1966.....	143.04	84.75 ¹	5.95 ¹	233.74
1967.....	157.83	97.45 ¹	6.33 ¹	261.61
1968 ¹	190.90	116.20	6.70	313.80
PERCENTAGE DISTRIBUTION				
1962.....	69.9	27.2	2.9	100.0
1963.....	68.8	28.2	3.0	100.0
1964.....	68.8	28.7	2.5	100.0
1965.....	66.7	30.9	2.4	100.0
1966.....	61.2	36.3 ¹	2.5 ¹	100.0
1967.....	60.3	37.3 ¹	2.4 ¹	100.0
1968 ¹	60.9	37.0	2.1	100.0

¹ Estimated

Section 2.—Expenditures on Personal Health Care

Expenditures on personal health care comprise expenditures of hospitals, earnings of physicians and dentists for professional services to their patients, the value of prescription sales through retail pharmacies, and an estimate of the amounts that private nurses, chiropractors, osteopaths and optometrists receive for their professional services; they exclude expenditures on public health, capital costs (buildings and interest) and administration costs of public-health programs and of insurance plans.

Table 2 shows the components for each year from 1957 to 1966. Canadians spent a total of \$2,815,500,000 on personal health care in 1966, almost three times as much as in 1957. Expressed as a proportion of the gross national product, personal health care expenditures rose from 3.4 p.c. in 1957 to 4.8 p.c. in 1966. Expenditure per person over the same period changed from \$66.24 in 1957 to \$140.64 in 1966. Expressed in constant dollars, according to the consumer price index, the expenditure per person increased by 63 p.c. over the same period, or by an average of 5.6 p.c. a year.

2.—Expenditures on Personal Health Care, 1957-66

(Millions of dollars)

Year	Hospital Services					Physicians' Services	Dentists' Services	Prescribed Drugs	Other ²	Total
	Active-Treatment Hospitals	Psychiatric Institutions	Tuberculosis Sanatoria ¹	Government of Canada ²	All Hospitals					
1957..	422.9	87.5	31.0	45.3	586.7	271.8	87.3	84.5	70.0	1,100.3
1958..	462.3	99.0	30.4	48.4	640.1	301.3	98.1	90.3	85.0	1,214.8
1959..	542.6	111.6	29.6	50.3	734.1	325.7	99.0 ²	106.5	95.0	1,360.3 ²
1960..	625.2	120.2	30.1	53.9	829.4	355.0	109.6	109.6	105.0	1,508.6
1961..	713.4	134.9	29.9	63.9	942.1	388.3	116.7 ²	122.8 ²	115.0	1,684.9 ²
1962..	802.9	144.4	29.1	70.3	1,046.7	406.1	121.7 ²	125.2 ²	125.0	1,824.7 ²
1963..	900.1	163.0	28.1	73.8	1,165.0	453.4	136.9 ²	140.8 ²	139.0 ²	2,035.1 ²
1964..	1,003.7	182.1	25.9	76.8	1,288.5	495.7	147.8 ²	154.4 ²	153.0 ²	2,239.4 ²
1965..	1,125.9	210.7	25.9	79.8	1,442.3	545.1	160.1 ²	169.7 ²	169.0 ²	2,486.2 ²
1966..	1,300.5	241.8	26.2	82.1	1,650.6	605.2	176.4	190.3	193.0	2,815.5

¹ Excludes hospitals of the Department of National Health and Welfare.
National Defence hospitals for 1957-60.

² Excludes Department of National Defence hospitals for 1957-60.
³ Estimates of expenditures for services of private nurses, chiropractors, osteopaths and optometrists; excludes hospital employees.

PART IV.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning research and education, supplementing the services of the federal and provincial authorities in many fields and playing a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them. The functions of twenty important voluntary agencies are described in the 1962 Year Book at pp. 270-274.

Voluntary Medical Insurance.—About 11,980,000 Canadians, or 60 p.c. of the population of Canada, had voluntarily secured some protection against the costs of physicians' services at the end of 1966. This protection was provided by 60 non-profit plans with an enrolment of 6,610,000, and by 80 private companies giving coverage to an estimated 5,380,000 persons. The total was 5,760,000 above the 1955 figure, which represented only 39 p.c. of the population.

The non-profit plans took in about \$221,300,000 in premiums and \$6,400,000 in other revenue in 1966, paid out \$199,800,000 in benefits and \$15,000,000 for administration, and were left with a surplus of approximately \$12,800,000. Thus, for every dollar of premiums, 90 cents were paid out in benefits, which amounted to approximately \$30.23 per person covered. In 1955, benefit payments had been \$41,400,000, representing 89 cents of the premium dollar and amounting to \$13.17 per person.

Profit-making private companies collected \$167,200,000 in premiums for health protection in 1966; they paid out \$132,300,000 in claims.

PART V.—UNIFORM LEGISLATION GOVERNING PRIVATE PENSION PLANS

The enactment of the Canada and Quebec Pension Plans emphasized the need for uniform private pension legislation across Canada. Ontario amended the Ontario Pension Benefits Act with effect from July 30, 1965, and Quebec enacted the Supplemental Pension Plans Act with effect from July 15, 1965. The Pension Benefits Act of Alberta came into force on Jan. 1, 1967, and that of Saskatchewan was assented to on Apr. 1, 1967. The provincial legislation governs all pension plans operating on and after the effective date in the particular province. Similar legislation at the federal level, the Pension Benefits Standards Act, was assented to on Mar. 23, 1967, and is applicable only to pension plans having members employed in works, undertakings and businesses (generally, banks and interprovincial transportation and communication) that are under federal jurisdiction.

Under these Acts, basic standards have been established with which pension funds or plans organized and administered to provide a pension benefit to employees must comply in order to receive registration, and they are not allowed to operate in these provinces or in the federal areas of responsibility unless they have received registration.

By agreement, each of the provinces mentioned above recognizes similar legislation of the others, so that a pension plan that has been registered and reports in one province does not have to seek registration or duplicate all its reporting procedures in another of these provinces if it extends its operations to employees in that other province.

The legislation requires that an employee's benefits under a pension plan become fully vested (i.e., he has full entitlement to those benefits, which will be paid to him on retirement) when he reaches age 45 and has completed either a minimum of ten years of membership in a pension plan or ten years of service with the one employer. Moreover, should the employee leave his job or resign his membership in the plan prior to retirement, at least 75 p.c. of his total benefits under the plan must be locked-in for purposes of his pension, allowing him to withdraw no more than 25 p.c. of the commuted value of those benefits in a lump sum.

Other provisions of this legislation are intended to ensure the full solvency of these pension plans within a specified period of time, to restrict the types of investments in which the funds of the plan may be invested, to provide that an employee's pension rights are portable if he should change his job, and to establish that each interested party to a pension plan is adequately informed as to the provisions of the plan.

PART VI.—VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board,

* Prepared by the Department of Veterans Affairs, Ottawa.

which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission.

The principal benefits now available to veterans are medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for the children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and dependants pensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 18 district offices and four sub-district offices in Canada and one district office in England; the benefits of the Veterans' Land Act are administered through seven regional offices and 24 district offices across Canada.

Canada's war dead were remembered in 1968 through Government-sponsored commemorative services held in Europe and in Ottawa to mark the 50th Anniversary of the Signing of the Armistice at the conclusion of World War I.

Section 1.—Pensions and Allowances

Disability and Dependants Pensions

Canadian Pension Commission.—The Canadian Pension Commission administers the Pension Act (RSC 1952, c. 207, as amended) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1952, c. 51, as amended). The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge.

The Pension Act.—Previous issues of the Year Book contain information on the development of Canadian pension legislation together with yearly statistics of numbers and liabilities. The Pension Act provides for the payment of pensions in respect of disability or death resulting from injury or disease incurred during or attributable to service with the Canadian Forces or the Naval, Army or Air Forces of Canada in time of war or peace. Provision is also made for supplementing up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II, or payment of pension at Canadian rates in cases where the claim has been rejected by the government of the country concerned.

Federal legislation assented to Mar. 27, 1968 (SC 1967-68, c. 34) increased the rates of pension payable for disability and death by approximately 15 p.c., retroactive to Jan. 1, 1968. Following are the rates of pension in force under Schedules A and B of the Pension Act from 1919 to 1968.

RATES PER ANNUM FOR 100-P.C. DISABILITY PENSIONERS (SCHEDULE A)—

<i>Effective Date</i>	<i>Disability Pensioner</i>	<i>Wife</i>	<i>One Child</i>	<i>Two Children</i>	<i>Each Subsequent Child</i>
	\$	\$	\$	\$	\$
Jan. 9, 1919.....	720	180	144	264	96
Jan. 9, 1920.....	900	300	180	324	120
Jan. 10, 1947.....	1,128	372	228	408	144
Jan. 1, 1952.....	1,500	540	240	420	144
Jan. 7, 1957.....	1,800	600	240	420	144
Jan. 3, 1961.....	2,160	720	324	564	192
Jan. 9, 1964.....	2,400	768	360	624	216
Jan. 9, 1966.....	2,760	768	360	624	216
Jan. 1, 1968.....	3,180	876	408	720	240

RATES PER ANNUM FOR WIDOWS AND DEPENDANTS (SCHEDULE B)—

Effective Date	Dependent Parent	Widow	One Child or Dependent Brother or Sister	Two Children or Dependent Brothers or Sisters	Each Subsequent Child or Dependent Brother or Sister
	\$	\$	\$	\$	\$
Jan. 9, 1919.....	576	576	180	300	96
Jan. 9, 1920.....	720	720	180	324	120
Jan. 10, 1947.....	900	900	228	408	144
Jan. 1, 1952.....	900	1,200	240	420	144
Jan. 7, 1957.....	1,080	1,380	240	420	144
Jan. 3, 1961.....	1,296	1,656	324	564	192
Jan. 9, 1964.....	1,428	1,824	360	624	216
Jan. 9, 1966.....	1,428	2,100	360	624	216
Jan. 1, 1968.....	1,632	2,400	408	720	240

NOTE.—The rates for orphan children or orphan brothers and sisters are double those shown above. The pensionable children of widows who have been awarded pension are paid at orphan rates. Pensions awarded to parents or brothers and sisters may be less than the amounts shown in accordance with the provisions of the Pension Act.

As will be noted from the above statement, the basic rate of pension for widows (which previously applied to widows of all ranks up to and including that of Colonel) was increased from \$2,100 to \$2,400 a year. This rate being higher than that formerly payable to widows of higher ranks, i.e., \$2,160, the increase had the effect of increasing pensions for the latter and making the rate for widows the same for all ranks. Disability pensions have been payable at the same rate for all ranks since the 1966 increase, so that rank now has a bearing only on parent's pension under Schedule B of the Act. The rate for the dependent parent of a deceased member of the forces who held the rank of Colonel and all ranks below, where there is no widow on pension, was increased from a maximum of \$1,428 to a maximum of \$1,632 a year; where the deceased held a higher rank, the maximum rate remains at \$2,160 a year. Also increased was the maximum rate that may be paid to a dependent parent if there is a widow in receipt of pension—from \$636 to \$732 a year, and the maximum additional amount that may be paid when there are two parents—from \$300 to \$348 a year.

For assessments lower than 100 p.c., the awards under Schedule A are proportionately less. Attendance allowance, which is payable to a pensioner who is totally disabled, helpless and in need of attendance, and which varies from a minimum of \$480 to a maximum of \$3,000 a year depending on the degree of attendance required, is paid in addition to pension. Although a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable.

The Civilian War Pensions and Allowances Act, Parts I to X, provides for the payment of pensions to or on behalf of persons who served in certain civilian groups that were closely associated with the war effort during World War II and who suffered injury or death as a result of such service; these include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in Britain, etc.

1.—Pensions in Force under the Pension Act, as at June 30, 1968

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	\$	No.	\$	No.	\$
World War I.....	28,622	37,751,702	13,640	31,735,786	42,262	69,487,488
World War II.....	105,162	117,079,870	15,476	30,082,751	120,638	147,172,621
Regular Force.....	2,694	2,296,446	598	1,538,476	3,292	3,834,922
Special Force.....	1,940	1,877,188	165	336,285	2,105	2,213,473
Totals.....	138,418	159,005,206	29,879	63,703,298	168,297	222,708,504

War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board.—The War Veterans Allowance Board is a quasi-judicial body consisting, at present, of nine members appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act and reports to Parliament through the Minister of Veterans Affairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a decision of a District Authority and may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for instructing and guiding the District Authorities in the interpretation of policy and for advising the Minister with respect to Regulations concerning the administration of the Act.

War Veterans Allowance District Authorities.—In 1950, 18 District Authorities were established in the regional districts of the Department of Veterans Affairs and granted full power to adjudicate on all matters arising under the War Veterans Allowance Act. In 1960, a separate Authority—the Foreign Countries District Authority—was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

War Veterans Allowances.—The War Veterans Allowance Act, 1952, as amended, provides an allowance to otherwise qualified war veterans who, because of age or infirmity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below a specified scale. Widows and orphans of qualified veterans are eligible for benefits. Since its inception in 1930, the Act has been amended on 14 different occasions to meet additional needs of veterans and their dependants. The most recent amendment increased monthly rates and annual income ceilings, effective Sept. 1, 1966, to:—

Item	Monthly Rate	Annual Income Ceiling ¹
	\$	\$
Single.....	105	1,740
Married.....	175	2,940
One orphan.....	60	1,008
Two orphans.....	105	1,608
Three or more orphans.....	141	2,016

¹ Where a recipient or spouse is blind, the income ceiling is \$120 higher.

At June 30, 1968, there were 83,496 recipients of War Veterans Allowances, made up of 51,406 veterans, 31,763 widows and 327 orphans; 635 of the total resided outside Canada. The annual liability for all recipients was estimated at \$93,300,000.

Civilian War Pensions and Allowances.—Part XI of the Civilian War Pensions and Allowances Act makes available to certain groups of civilians, their widows and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I or World War II, are: Canadian merchant seamen of both Wars; non-Canadians who served in Canadian merchant ships in either War; Canadian voluntary aid detachments of World War I; Canadian firefighters of World War II; Canadian welfare workers of World War II; Canadian transatlantic aircrew of World War II; and Newfoundland Overseas Forestry Unit of World War II.

At June 30, 1968, there were 1,573 civilians, 390 widows and four orphans in receipt of Civilian War Allowances, a total of 1,967 of whom five resided outside Canada. The annual liability was estimated at \$2,800,000.

Veterans' Bureau

The Veterans' Bureau, which is a branch of the Department of Veterans Affairs, assists former members of the Armed Forces and their dependants and former members of the various auxiliary organizations in preparing and presenting claims to the Canadian Pension Commission; it has been in operation for 37 years. The Chief Pensions Advocate, who heads the Bureau at Ottawa, is assisted by pensions advocates, most of whom are lawyers located in the departmental district offices. The pensions advocates appear as counsel for applicants before Appeal Boards of the Commission and, in addition, advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on pension claims. No charge is made for the services of the Bureau.

During 1967, the Veterans' Bureau submitted 6,259 claims to the Canadian Pension Commission for adjudication, of which 37 p.c. were wholly or partially granted. These included 835 claims presented to Appeal Boards of the Commission.

Section 2.—Welfare and Treatment Services

Welfare Services

Welfare services for veterans and, where appropriate, their dependants are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral, where indicated, to other public or private agencies, veterans organizations, etc.

War Service Grants.—War service gratuities payable under the War Service Grants Act to veterans of World War II and the operations to restore peace in Korea are now payable only in cases where delayed application is acceptable. Re-establishment credit payable under the same Act was available up to Oct. 31, 1968. Payment of the credit, except for a balance of \$50 or less, is not made in cash to the veteran but is released on his behalf for specified purposes. Up to Mar. 31, 1968, a total of \$315,609,877 had been paid out and unused balances amounted to \$8,273,747. During the year ended Mar. 31, 1968, \$141,407 was paid out, made up of \$81,723 for purchases of homes and for repairs and furniture; \$15,084 for purchases of businesses, tools and equipment; and \$44,600 for miscellaneous items such as insurance, special equipment for training, clothing, etc.

Assistance Fund.—Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the Assistance Fund if their total income is lower than the permitted maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted during the fiscal year 1967-68 was 18,557, the number in receipt of monthly supplements at the end of the year was 13,471 and Fund expenditures for the year amounted to \$6,452,345; comparable figures for 1966-67 were 20,421, 13,785 and \$5,867,068, respectively.

Education Assistance to Children.—The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of those whose deaths have been attributed to military service. Assistance is restricted to children attending, in Canada, educational institutions which require secondary school graduation, matriculation or equivalent standing for admission. These include, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to Mar. 31, 1968, expenditures totalled \$7,271,233 of which \$3,901,581 was spent in allowances and \$3,369,652 in fees. By the end of March 1968, 4,486 children of Canada's war dead had

been approved for training. Of these, 1,817 had successfully completed training—253 had obtained degrees in arts and science, 346 in education, 121 in engineering and applied science, 39 in social work, 32 in medicine, 30 in law, 125 in other university faculties, 421 in nursing, 229 in teaching and 221 in administrative and technological fields. At the same date there were 601 university undergraduates and 257 students in non-university courses receiving assistance.

Veterans Insurance.—The Returned Soldiers Insurance Act (SC 1920, c. 54 as amended) provided eligibility to contract for life insurance with the Federal Government up to a maximum of \$5,000 to any one veteran of World War I. No policies were issued after Aug. 31, 1933. There were 48,319 policies issued during the eight years in which the Act was open amounting to \$109,299,500 and, of these, there were 5,635 in force with a value of \$12,149,862 on Dec. 31, 1967.

The Veterans Insurance Act (RSC 1952, c. 279 as amended) enables veterans following their discharge and widows of those who died during World War II service to contract with the Federal Government for a maximum of \$10,000 life insurance. Veterans with active service in Korea were extended eligibility by virtue of the Veterans Benefit Act 1954. The period of eligibility to apply for this insurance ended Oct. 31, 1968. To Dec. 31, 1967, 54,279 policies in the amount of \$177,700,500 had been issued and, of these, 26,303 policies with a value of \$83,989,850 were in force.

Rehabilitation and Welfare.—Welfare officers at Departmental District Offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependants to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. A program of university, vocational, technical and home training, with allowances, is provided for disabled pensioned veterans and vocational rehabilitation is also promoted by training assistance. Correspondence courses purchased from provincial Departments of Education are also made available. Sheltered workshops at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths associated with Remembrance Day observances.

Treatment Services

The Treatment Services Branch of the Department of Veterans Affairs provides medical and dental services for entitled veterans throughout Canada as well as for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned. Prosthetic services are provided to entitled veterans by the Department of National Health and Welfare but paid for by the Department of Veterans Affairs.

The Branch provides examination and treatment to disabled pensioners for their pensionable disabilities, and provides treatment to war veterans allowance recipients (but not to their dependants) and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Where Departmental facilities are not readily accessible, an eligible veteran may obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice. Domiciliary care may be provided to eligible veterans in Departmental facilities where the need for active or chronic treatment is sufficiently light provided that excess beds are available.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Premiums are paid on behalf of veterans in receipt of war veterans allowance. The Veterans Treatment Regulations

apply in DVA institutions and elsewhere under Departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

Hospital Facilities.—Treatment is provided in 10 active-treatment hospitals located at Halifax, N.S.; Saint John, N.B.; Quebec City, Montreal and Ste. Anne de Bellevue, Que.; London, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver and Victoria, B.C.; and in three domiciliary care homes at Ottawa, Ont.; Saskatoon, Sask.; and Edmonton, Alta. The rated bed capacity of these institutions at June 30, 1968 was 7,010 beds. It should also be noted that in Ottawa both acute and chronic cases that require definitive treatment are admitted to the National Defence Medical Centre. A veterans pavilion of 67 beds is located at St. John's General Hospital, St. John's, Nfld.; 1,200 beds are available at Sunnybrook Hospital in Toronto for the priority use of veterans and 565 in community hospitals located in St. John's, Nfld.; Charlottetown, P.E.I.; Kingston and Port Arthur, Ont.; Regina and Saskatoon, Sask.; and Edmonton, Alta.

Medical Staff and Training Programs.—Many of the professional staffs of Departmental active-treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. Most members of the medical staffs are engaged in teaching and private practice and hold appointments on the medical faculties of the various universities. In the active-treatment institutions, medical teaching programs are maintained. All active-treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in medicine and surgery, and the majority are also approved for advanced postgraduate training in various other specialties. An extensive resident program is in effect in the medical specialties as well as in other fields such as physiotherapy, occupational therapy, dietary, psychology and medical social services. A school for the training of nursing assistants, operated at Camp Hill Hospital in Halifax, has an annual capacity of 70. Postgraduate and continuing education in pharmacy is conducted at Westminster Hospital, London, Ont.

Clinical Research Program.—During 1967, there were 56 projects in progress under the clinical research program. This program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained clinical investigation units are established in active-treatment hospitals located at Montreal, London, Winnipeg and Vancouver.

Section 3.—Land Settlement and House Construction

The Veterans' Land Act, 1942, as amended, provides financial, technical and supervisory assistance to World War II and Korean Force veterans, to enable them to engage in agriculture or commercial fishing on a full-time or part-time basis; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve land. Loans may be made of up to \$40,000 for full-time farmers on economic farm units, to \$18,000 for small family farmers, to \$16,000 for small holders (part-time farmers) and to \$18,000 for veterans building houses on city-size lots. The financial assistance available under the Act is generally comparable to that available to non-veterans under the Farm Credit Act and the National Housing Act.

From inception of the Act to Dec. 31, 1967, 110,824 veterans were settled under the provisions of the Act: 31,001 were established as full-time farmers, 66,867 as small holders, 5,618 as Crown land settlers, 1,369 as commercial fishermen, 1,681 Indian veterans were established on reservations and 4,288 veterans acted as their own contractors in building homes on city-size lots. Subsequent to settlement, 15,637 farmers and 11,744 small holders and commercial fishermen were given additional financial assistance. In 1967, loans amounting to over \$95,700,000 were approved on behalf of 9,557 veterans. Since

inception of operations to the end of 1967, about \$863,000,000 was spent on repayable loans, advances and non-repayable grants and nearly 59,000 veterans had earned conditional grants of \$106,000,000. By the end of that year, 35,398 of them had successfully completed their settlement contracts—12,768 farmers, 16,296 small holders, 500 commercial fishermen, 4,378 Crown land settlers, and 1,456 Indian veterans on reservations.

Field Officers highly trained in the techniques pertaining to agriculture, construction and land appraisals provide advisory, supervisory and appraisal field services. During 1967, 8,270 properties were appraised exclusive of 102 appraisal assignments carried out on behalf of other government departments and agencies. Altogether, 1,320 new houses were started—1,120 for small holders and commercial fishermen, 160 farm homes and 40 on city-size lots—and 1,229 new houses were completed. Four construction schools were organized, attended by 188 veterans.

During 1967, instalments falling due on properties purchased by veterans under the Act amounted to \$25,500,000, excluding share-of-crop payments; over 96 p.c. of the total amount due was collected and 1,221 veterans under Share-of-Crop Agreements paid almost \$1,200,000.

By Dec. 31, 1967, 11,119 veterans were insured under the Veterans' Land Act Group Life Insurance for almost \$100,000,000. Since inception of the group plan, 86 insured veterans died and \$495,175 was paid to retire their indebtedness.

2.—Summary of Operations Under the Veterans' Land Act, as at Dec. 31, 1967

Item	Full-Time Farming	Small Holding	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Settlements made.....No.	31,001	66,867	1,369	5,052	566	1,678	4,288	110,821
Additional loans made....."	15,623	11,639	105	—	—	—	—	27,367
Total loans made....."	46,624	78,506	1,474	5,052	566	1,678	4,288	138,188
Public funds spent .....\$'000	281,500	506,820	7,290	11,160	1,225	3,790	39,265	851,050
Conditional grants earned.....No.	22,826	28,950	854	4,066	305	1,449	—	58,450
.....\$'000	47,626	42,602	1,569	9,271	717	3,313	—	105,098
Grants earned—titles released to veterans.....No.	12,624	15,944	493	4,066	305	1,449	—	34,881
Accounts under administration....."	13,236	39,078	683	282	126	—	54	54,655 ¹
Houses built....."	2,662	27,514	326	1,464	131	—	4,262	36,359
Houses under construction....."	143	1,009	7	13	—	—	36	1,208

¹ Includes 1,196 civilian purchaser accounts.

Section 4.—Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents—the Original Charter of Incorporation dated May 21, 1917, and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914, and Aug. 31, 1921, and between Sept. 3, 1939, and Dec. 31, 1947, and with the erection of memorials to commemorate those with no known grave.

The Canadian High Commissioner in London, England, is the official Commission member for Canada, the Minister of Veterans Affairs is the Agent of the Commission in Canada, and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

CHAPTER VII.—EDUCATION

CONSPECTUS

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PART I.—FORMAL EDUCATION*

Section 1.—The Current Education Situation

The Canadian education scene in the late 1960s continues to be dominated by the need for the development of ever greater knowledge, skills, understanding and appreciation among the nation's youth in order to prepare them, individually and as a community, for the challenges they are expected to face in the future. It is widely recognized that this need should be met not only by developing still further the élite at the top of the academic pyramid but also by extending the base to include all young persons, whatever their abilities and aptitudes and whatever their social circumstances and financial resources.

The findings of systematic research as well as the sometimes bitter experiences of schoolmen have brought about an increased realization of the great diversity in aptitude patterns among young people. If all are to be educated so that individual potential may be fully realized, it follows that there must be an equal diversity in the programs of study or training. Facilities for those of academic and scholarly inclination have existed for many years so that recent emphasis has been placed upon the provision of programs suited to those of more practical bent and to the introduction of other measures designed to hold students within the formal education systems to ever-increasing levels of age and attainment. The modern-day labour force has little use for the untrained and poorly educated young person but is greatly in need of qualified tradesmen, technicians and professionals. For this reason there has been an upsurge in the building of vocational and composite schools, the establishment of community colleges and the introduction of policies and practices to cope more adequately with individual differences, such as non-graded systems, subject-promotion schemes and the extension of guidance facilities.

* Revised in the Education Division, Dominion Bureau of Statistics.

Efforts are also being made to overcome the financial barriers to continuing education. The investigations of demographers and sociologists are confirming and quantifying the long-held suspicions that financial constraints are operating to deny education to many Canadians who could profit from it. Various methods are therefore being sought to lighten the financial burden upon the individual and to equalize the rapidly increasing load being carried by the taxpayer. It is now evident that the Federal Government has a key role to play in this matter, particularly in adult technical and vocational training and in university education—both matters of prime concern to the nation as a whole. Acknowledgement of this fact is to be seen in the increasing activities of the federal Department of Manpower and Immigration, the formation of a federal office to deal with higher education, the founding of a nation-wide Service for Admission to Colleges and Universities, the holding of interprovincial Ministers' conferences on education and manpower, and renewed attempts to introduce uniform methods of statistical reporting.

Thus it appears that ethical considerations concerning the duties of society in the satisfaction of the personal needs of the individual and economic considerations concerning the kinds of individuals required to satisfy the manpower needs of society are combining to encourage the extension and equalization of educational opportunity. The rising costs of this endeavour are causing a reappraisal of traditional methods of financing education, tending toward the assumption of increasing proportions of the load by higher levels of government. Taken along with other developments in the economic, social and cultural life of the community, this is resulting in the emergence of the federal authority as an important partner in the task of providing for the education of Canadians.

Section 2.—Administration and Organization of Education

Responsibility for Education in Canada

Canada is a federal state, in which responsibility for the organization and administration of public education is exercised by the provincial governments. The Federal Government is directly concerned only with the provision of education for certain special groups—some 66,200 Indian and 3,600 Eskimo children of school age, other children in the Territories, inmates of federal penitentiaries and families of members of the Armed Forces on military stations (although whenever possible provincial educational facilities are used). In addition, the Federal Government finances vocational training of adults, provides financial support to the provinces amounting to at least 50 p.c. of operating costs of post-secondary education, participates to a considerable extent in informal education and makes grants-in-aid for research personnel and equipment in universities.

Because each of the ten provinces has the authority and responsibility for organizing its education system as it sees fit, organization, policies and practices differ from province to province. Each has a department of education, headed by a minister who is a member of the Cabinet. Ontario has, in addition, a Department of University Affairs under its Minister of Education. Each department is administered by a deputy minister, or director, who is a professional educationist and a public servant. He advises the minister, supervises the department and gives a measure of permanency to its education policy, in general carries out that policy, and is responsible for the enforcement of the Public School Act. The department of education usually also includes: a chief inspector of schools and his staff of local inspectors; directors or supervisors of curricula, technical education, teacher training, home economics, guidance, physical education, audio-visual education, correspondence instruction and adult education; directors or supervisors of other sections (according to the needs of the particular province); and technical personnel and clerks. Quebec operates a dual system, with an associate deputy minister for each of the Roman Catholic and Protestant sectors. In Newfoundland, which has a public denominational system, there is a superintendent for each one of the five denominations recognized by the School Act.



Carleton University campus is attractively situated between the Rideau River and the Rideau Canal which flow through central Ottawa. This institution, established as a college in 1942 and incorporated as a university in 1967, had a full-time student registration of 5,950 and a part-time registration of 4,200 in 1968-69.



Gymnasium at Fraser University, Vancouver, with students writing examinations.

Other provincial departments having some responsibility for operating school programs are: departments of labour, which operate apprenticeship programs; agriculture departments, which operate agriculture schools; departments of the attorney-general or of welfare, which operate reform schools; and departments of lands and forests, which operate forest ranger schools.

From the beginning, each department of education has undertaken, among other things, to provide: (1) inspection services to ensure maintenance of standards; (2) the certification of teachers; (3) courses of study and lists of prescribed or approved textbooks; (4) financial assistance to local authorities in the construction and operation of schools; and (5) regulations for the guidance of trustees and teachers. In return, each department requires regular reports from the schools. When first introduced, government grants to schools were based on such factors as the number of teachers, enrolment, days in session and attendance. Somewhat later, special grants were introduced in most provinces to meet a variety of expenses, such as the construction of the first school, the organizing of special classes, providing transportation for pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants, and now the majority have a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have expanded their services in the fields of health, audio-visual aids, art, music, agriculture, special education, correspondence courses and prevocational and trade courses. At the same time there has been an increasing delegation of authority to local boards and school staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or two such examinations—at the end of the final and, in some cases, also at the end of the second last year of the secondary school course. Another illustration is the increasing use of lists of approved textbooks from which local authorities may make their own choice, instead of lists of prescribed texts. Courses of study are now seldom planned by only one or two experts in the department; instead they result from conferences and workshops including active teachers and other interested individuals or bodies. In most provinces "curriculum construction" is considered to be a continuous procedure.

Local Units of Administration

In all provinces, school laws provide for the establishment and operation of schools by local education authorities, which operate under the Public School Act and are held responsible to the provincial government and resident ratepayers for the actual operation of the local schools. Through the delegation of authority, education becomes a provincial-local partnership with the degree of decentralization reviewed intermittently. Questions concerning the allocation of responsibilities between the provincial and local authorities will probably occupy the minds of Canadians for decades to come, as well as problems such as the optimum size of administrative units, schools and classes.

At one time, the provincial departments delegated authority to publicly elected or appointed boards, which functioned as corporations under the School Acts and regulations. These three-man boards were expected to establish and maintain a school, select a qualified teacher and prepare a budget for presentation to the municipal authorities. As towns and cities developed, the original boards remained as units but provision was made in the legislation for urban school boards with more members and generally (although not always) with responsibility for both the elementary and secondary schools.

Rural school districts were typically about four miles square, their size determined largely by the need for the school to be within walking distance of the homes it served. As time went by, the realization grew that the manner of living was changing, that farms were becoming much larger and more mechanized, that most farmers had trucks and automobiles, that there were fewer children to the square mile and that it would be more efficient and economical to provide central schools and transportation. There was also considerable discontent among the teachers, as security of tenure was rarely found under

the three-man local school boards. Further, the shortage of teachers, differences among the districts in their ability to pay for education, and a demand for secondary school facilities in rural areas all combined to force the establishment of larger administrative units.

Under provincial legislation, larger units are now in effect in Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia, and their establishment is being encouraged and promoted in Newfoundland, Prince Edward Island and Manitoba. (Newfoundland is a somewhat special case in which the denominational school districts, already rather large geographically, are proceeding toward some kind of amalgamation of Protestant boards.) Ontario has abolished the local school sections in favour of township school areas and is now reorganizing into county units with responsibility for both elementary and secondary education. In Quebec, the greater part of the Protestant system is organized into larger units and the Catholic system has reorganized its administrative structure (for secondary education) into 55 regions.

In some provinces the local boards disappeared when the larger units were formed; in others they were retained with limited powers and duties. The larger unit boards accept responsibility for providing the necessary staff, buildings, equipment and transportation. Where local boards remain, they usually function in an advisory capacity and look after the buildings and grounds.

Elementary and Secondary Education

Enrolment in elementary and secondary schools has been increasing year by year until, in 1968-69, there were 5,499,000 pupils enrolled in public and separate schools, 190,000 in private schools and 214,000 full-time students in various vocational schools and courses, both public and private.

Each September, most Canadian children of age six enter an eight-grade elementary school. At about 14 years of age, nearly 90 p.c. of those who entered grade 1 enter a regular four- or five-year secondary school. From the graduates at this level a limited number—about 13 p.c. of those who began school—go on to college or university where rather more than half of them pursue a three- or four-year program leading to a bachelor degree in arts or science and the remainder enrol in various professional courses such as commerce, education, engineering, law, medicine, theology, etc.

The 8-4 plan leading from grade 1 to university was for many years the basic plan for organizing the curriculum and schools, other than those of Catholic Quebec. This plan, although still followed in some rural, village, town and city schools, has been modified from time to time in various provinces, cities or groups of schools, as it appeared inadequate to meet the demands arising from new aims of education. There are a number of variants to be found at present in Canada: the addition of one or even two kindergarten years at the beginning of the system; the addition of an extra year to high school, providing five rather than four years of secondary schooling; the introduction of junior high schools, changing the organization to a 6-3-3 or 6-3-4 plan; or again, the combining of the first six years of elementary school into two units, each designed to reach certain specified goals during a three-year period. A fairly recent innovation is the establishment of junior colleges, affiliated with universities, in which the last one or two years of high school and the first one or two years of college are offered.

The first secondary schools were predominantly academic and prepared their pupils for entry into university. Until recent years, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, besides commercial and vocational high schools, there are, in increasing number, composite and regional high schools that provide courses in home economics, agriculture, shop-work and commercial subjects as well as in the regular secondary school subjects. The number of subjects offered has also increased greatly and the number of options available, particularly in certain provinces, provides a wide choice for pupils with a great variety of abilities and aims. Three programs can frequently be distinguished—the university entrance course,

the general course for those who wish to complete an academic type of program before entering employment, and vocational courses for those who wish to enter skilled trades. Thus, attention is given to the minority who will go on to institutions of higher learning, while the majority, who will look for jobs, are prepared for entry to their chosen occupation. Considerable emphasis has been placed on music, art, physical education, guidance and group activities but not at the expense of the basic subjects that provide a general foundation.



Eighteen pianos played by 36 young musicians at grade five and six level performed at Piano Festival '68, held in an Ottawa high school, in which 350 students took part. About half of them were children who receive piano instruction in elementary schools.

Development of Education in Quebec

In the past few years, education in Quebec has undergone tremendous change. First of all, education is losing its "confessional" character. Secondly, the trend in this province is to establish a system more like those in other provinces of Canada where there is a single public administrative authority at the provincial level. In accordance with the recommendations of the Royal Commission on Education (begun in 1961 and whose first report was published in 1964), the Quebec Legislature in early 1964 passed a law (Bill 60) setting up a new administrative structure for the school system; the Department of Education replaced the Department of Youth and the Department of Public Instruction.

The change of system required the building of new schools and the acquisition of new teaching materials and additional teaching personnel. As a result, expenditures on education rose from \$218,000,000 in 1965 to a budgetary estimate of \$1,000,000,000 in 1967-68. Many small rural schools were closed and, conversely, a network of 55 regional school boards was created extending over the whole province. Some of the new regional schools are actually "student cities".

Kindergartens, admitting five-year-olds, are now part of the school system and registrations in them have risen from 17,000 in 1962-63 to 77,200 in 1967-68. Instruction, under the direction of skilled personnel, is intended to develop the child's creative imagination, sense of observation, sociability and manual aptitude. No academic subjects are taught at this level.

Elementary education, intended for students aged six to 11, is given in public schools operated under the direction of local school boards. Courses, including languages (French-English), arithmetic, Canadian history, geography, religion, domestic science, manual training, music appreciation, physical culture and drawing, extend over six years instead of seven as in the past. At this level, the new concept of placing the emphasis on the age of the child rather than on the degree of the course is based on the premise that the child should develop in a homogeneous group and age has been selected as the determining factor for such a homogeneous group. Children of the same age are thus brought together at certain times for common activities and at others are separated into average, accelerated or slow courses, according to their own aptitudes.

Secondary schools absorb all children between ages 12 and 16 leaving elementary school. The length of the course has been extended from four to five years, regardless of whether instruction is general or scientific. The trend is toward a composite course with graduated options and promotion by subject matter. In practice, this means that a pupil may be enrolled in grade nine mathematics and in grade 11 French, although the level of separation should never be more than two years. A series of courses (mother tongue and the second language, mathematics, history, etc.) are basic mandatory subjects for all pupils at this level. For additional subjects, the pupils may choose between various options and may acquire, even during the final year, a terminal specialty in vocational or commercial subjects. Practical shop-work and pre-employment classes are integrated at this level and the pupils in these courses may acquire an educational status equivalent to that of other pupils at the same level.

Between the secondary school and the university, special institutes *Collèges d'enseignement général et professionnel* (CEGEP), offer a wide variety of courses, some of which lead to university and others to the labour market, particularly to those occupations requiring technical training. The courses in these institutes are intended to perfect and reinforce the broad training of the student through certain disciplines, such as arts and philosophy, and allow him to begin or complete his occupational training. They therefore replace, through integration, a great many schools and courses previously fragmented.

It should be mentioned here that the traditional classical courses will one day disappear. Through a special program under the Department of Education, existing private institutions may become associated with regional school boards to offer secondary school instruction. By co-ordinating their secondary education with that offered by the school boards, they may attain the status of "associated institutions" and be financed wholly by the regional school boards.

Universities do not form part of the public educational system in Quebec. They are, in practice, administered by private corporations which are completely free as to the direction of their courses of study and of the entire university life.

Newfoundland

The topographical and economic circumstances of the Island influenced the development of education as did pockets of settlers establishing themselves in outposts which were relatively self-sufficient. Active leadership of the churches and homogeneity of the village populations provided a minimum of overlapping of denominations except in a few industrial areas or the larger cities. A Royal Commission recently has studied the present organization with a view to increasing the education level of the Island's population.

The present system is predominantly denominational although there are amalgamations of some Protestant boards and community schools operated by the Department of Education. The schools are administered on a local basis by the five largest denomina-

tional groups—Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Assemblies. These operate under five superintendents, each in charge of the schools of his faith, and a member of the Department. Local boards, often including the local clergymen as members, select teachers, pay salaries from government grants and look after the school property. All schools follow the provincial course of study and examinations, scholarships and diplomas are determined by an interdenominational body representing the major denominations and the Department.

Education in the Yukon and Northwest Territories

In the Yukon Territory, the school system is operated by the Territorial Government through a superintendent and staff at Whitehorse responsible to the Commissioner of the Territory who, in turn, receives instructions from the Minister of Indian Affairs and Northern Development in Ottawa. The Education Division of the Northern Administration Branch of the Department of Indian Affairs and Northern Development offers advice on education policy to the Minister and Territorial authorities. All schools, both public and separate, with the exception of the Carcross Indian Residential School (operated by the Department in co-operation with the Territorial Government) come under the direct ownership and operation of the Government of the Yukon Territory. Although there is provision for three types of schools in the Yukon—public, separate and Indian—most of the Indian children attend either the public or the separate schools. In 1967, the population was 15,000 of whom about 2,400 were Indians. By choice, the schools of the Yukon follow the British Columbia education curricula.

In the Northwest Territories (the Districts of Mackenzie, Franklin and Keewatin) the school system is operated by the Education Branch of the Department of Indian Affairs and Northern Development. The Federal Government, as the operating agency, finances school operation and receives from the Territorial Government the pupil cost for pupils who are neither Indian nor Eskimo. Enrolment for the 1967-68 term included 3,626 Eskimos, 1,544 Indians and 3,430 others, a total of 8,600 in the Northwest Territories and Arctic Quebec combined. Yellowknife public and separate school districts and Hay River separate school district are financed partly by local taxation and partly through grants-in-aid from the Federal and Northwest Territorial Governments. Inspection and supervisory services are provided by the Education Division. Alberta education curricula, subject to increasing modifications, are prescribed for the schools of the Northwest Territories. Expansion is taking place in school accommodation and basic elementary and secondary education is being provided for all children in the Territories and for Eskimo children in northern Quebec, as well as vocational training for them and for young adults showing interest and special aptitude. The program, which is an integrated one for the children of all races in the North, provides for the construction of schools and student residences, curricula designed for a northern environment, bursaries and other student aids, and special vocational training projects appropriate to both local craftsmanship and mechanical trades in such fields as construction, transportation and mining.

Special Education

Interest is increasing in the education of exceptional children—those who deviate so far from the normal as to require special educational facilities. New types of special classes are sometimes started by parents of children with a common disability, who band together to provide help and show the need for such service, which is then taken over by public bodies. Progress in providing such education varies from province to province. It is most commonly found in the city school systems; in rural areas there is usually little provision for the child who needs special attention, except for those who are admitted to residential institutions. There are six schools for the blind, 15 schools for the deaf and a number of training schools for mental defectives. Special classes are found in tuberculosis sanatoria, mental hospitals and reformatories. In many cities, there are classes for the hard-of-hearing, the partly blind and other physically and mentally handicapped children and a few for the highly gifted.

Teachers

All provinces require candidates for elementary school teacher certificates to have high school completion or better, with at least one year of professional training in a faculty of education or a teachers' college. The training usually consists of professional and academic courses, and some time spent in practice teaching. High school teachers are generally university graduates who have taken an additional year of professional training in a college of education, or who have graduated with a degree in education. The trend is for the government departments of education to give the universities responsibility for the training of elementary school teachers as well as secondary school teachers. In Newfoundland, Prince Edward Island, Manitoba, Saskatchewan, Alberta and British Columbia all teacher training is conducted at the university, where three or four different courses leading to a degree are provided. About three quarters of the time is devoted to academic courses in arts and science and the remainder to professional courses. In some of the other provinces, close contact is maintained between teacher training college and university.

In 1967-68 there were 69 normal schools and teachers' colleges and 30 faculties or colleges of education engaged in teacher training with a total enrolment of over 44,000. In the same year there were 237,000 full-time teachers in the public elementary and secondary schools in Canada and 12,000 in the private schools.

Most teachers in these schools are paid according to a local salary schedule based on years of training and experience; they contribute to a provincial superannuation scheme and are members of a provincial professional organization. In 1967-68 about 62 p.c. of them were women, of whom a little more than half were married. The median salary of all teachers and principals in the nine provinces other than Quebec was \$6,524, an increase of 17.2 p.c. over the previous year. Apart from teachers in Quebec concerning whom adequate data were not available, about 15 p.c. of those in elementary schools and about 73 p.c. of those in secondary schools had university degrees.

Higher Education

Out of the two distinct cultures upon which the Canadian nation is founded have arisen two somewhat different systems of higher education. One, originally patterned on the French system before the secularization of higher education in France with the majority of the institutions under control of Catholic orders or groups, has in recent years adapted more and more to North American traditions but still retains distinctively French characteristics. The other was originally designed more according to English, Scottish and United States practices, instruction being given in English and controlled by a variety of groups—religious denominations, governments and private non-denominational bodies. Institutions comprising a third small group and giving instruction to both English-speaking and French-speaking students are operated or controlled mainly by Catholic groups, although the first such bilingual institution to be established—the University of Ottawa—was reorganized in 1965 under a non-denominational board of governors.

Large universities, with numerous faculties and provision for graduate study in many fields, are comparatively recent phenomena. Until the middle of the nineteenth century, higher education in Canada included little more than arts and theological training. From that time, more instruction in science and certain professional fields was gradually introduced. Graduate studies, to judge by the number of earned doctorates, did not acquire numerical importance until after 1920. In 1967-68, 1,048 earned doctorates were granted.

Civil legislation regarding the establishment of new institutions, or changes in existing ones, is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or *recteur*) to the senate and deans and the faculty as a whole.

The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the

business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. The size of the board varies from a very few to over sixty. It has ultimate control of the university and normally reserves to itself complete financial powers, including the appointment of the president and most other staff. On occasion there will be faculty representation on the board and recently there have been attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to the senate. Composed mainly of faculty members, although there may also be alumni and representatives of non-academic groups included, it is responsible for admission, courses, discipline and the awarding of degrees.

Although there are variations, most students enter a university after the completion of from 11 to 13 years of elementary and secondary schooling. In from three to five years, courses of instruction lead to a bachelor's degree in arts, pure science and such professional fields as engineering, business administration, agriculture and education. Courses in law, theology, dentistry, medicine and some other fields are longer—usually requiring for admission completion of part or all of a first-degree course in arts or science. For those pursuing graduate studies and research, the second degree is normally the master's or *licence*—at least one year beyond the first degree—and the third is the doctorate, normally requiring at least two additional years beyond the second degree.

There are about 400 institutions of higher education in Canada, of which about 60 have degree-granting powers (not including about a score that confer degrees in theology only). Full-time enrolment in the fall of 1967 was 261,207, a 12.2-p.c. rise over the previous year. The tremendous increase in demand for university places in recent years has resulted in a rapidly intensifying crisis in the financing of higher education, and a commission under the chairmanship of Dean Vincent Bladen of the University of Toronto was set up in 1963 by the then Canadian Universities Foundation, now the Association of Universities and Colleges of Canada, to study the financing of higher education in Canada. The Commission presented its report in the fall of 1965; among its recommendations were many referring to increased federal support for the universities. The current financing of universities is discussed at pp. 358-359.

In addition to the full-time university-grade enrolment, almost as many students are enrolled at the pre-matriculation level or are taking university-grade courses on a part-time basis, whether in the evenings, during summer session or by correspondence. The numbers of graduates in most faculties for 1966-68 are given in Table 10, p. 357.

Trade and Technical Education and Training

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it increasingly difficult to find suitable employment and many are now trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Those persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

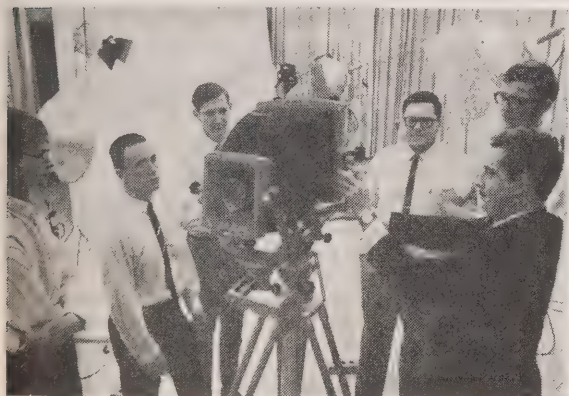
Hand in hand with this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to meet the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility which must be provided, as needed, throughout the man's working life. Education of this nature is of national concern and has a direct impact upon material prosperity, the economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institutes offering vocational education—secondary schools, trade and occupational training schools and post-secondary institutes of technology. Many municipal school

boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto-mechanics, along with instruction in general academic or cultural subjects.

Trade and occupational training schools, on the other hand, are open only to those who have passed the provincial school-leaving age and have left the regular school system. These schools offer specialized training and their purpose is to develop competent people for a wide variety of occupations. Courses at the trade level do not usually require high school graduation; the grade level demanded, which varies according to province or trade, ranges from grade eight to grade 12.

The third type, the institutes of technology, operate at a higher level of training. Enrolment in the institutes presupposes high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Graduates from



The Northern Alberta Institute of Technology at Edmonton is one of the recently established institutes across the country providing post-high school students with employable skills required by specific areas of industry, business and government. This Institute, in eight buildings essentially under one roof, has 171 shops and laboratories and 109 classrooms equipped with the most modern facilities to accommodate 4,800 day students at one time and a possible 6,000 at night school.



institutes of technology are awarded diplomas of applied arts or diplomas of technology and form an essential link between the professionals on the one hand and qualified craftsmen on the other. Most of the institutes of technology and trade schools across Canada are provincially operated.

In addition to the vocational education and training provided by these three types of publicly operated schools, many private business colleges and trade schools offer a wide variety of business, trade and technical courses, some through correspondence. Vocational education is also carried out under a system of apprenticeship training. Such training is given mainly on the job, with classes taken at the trade schools either during the evening or on a full-time basis during the day for periods ranging from three to 10 weeks a year.

Under the Adult Occupational Training Act, the Federal Government takes full responsibility for financing the cost of training adults who are or should be in the labour force. The cost of providing primary, secondary and post-secondary education remains a provincial responsibility.

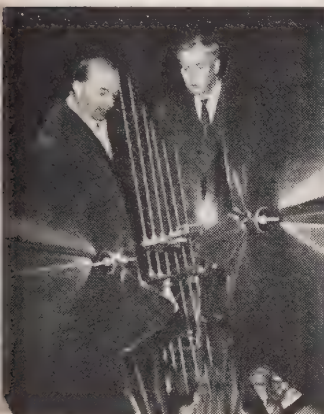
If, in the opinion of a Manpower Counsellor, it is in the best interest of the individual and of the economy for an adult to undertake training or retraining, it will be purchased by the Federal Government from a public or private training institution or from industry.

The program also provides for the payment of allowances to persons who have adult economic responsibilities to enable them to take training but it intentionally avoids the payment of such allowances to youth whose education should normally be provided by the province. Adult trainees who have been three years in the labour force, which includes periods during which employment was being sought, or those who have dependants, are paid these allowances, which range from \$37 to \$96 per week.

The federal-provincial Capital Assistance Program begun under a former agreement has been extended for the benefit of those provinces which were not able to take full advantage of the previous program. This will allow for a continued expansion of facilities to carry out a variety of vocational programs. During the period Apr. 1, 1961 to Mar. 31, 1968, projects valued at nearly \$1,676,000,000 were approved, which, when all completed, will provide a total of 496,298 new places for students, most of whom will be enrolled in two- or three-year courses. These included the construction of 581 new high schools with facilities for vocational training plus major additions to 117 such schools; construction of 88 new trade schools and enlargement of 113 existing trade schools; and construction of 19 new technical institutes plus major additions to 20 existing institutes. In addition, 187 minor projects and three special equipment projects were undertaken involving extension to existing schools. The additional facilities are summarized by province as follows:—

Province or Territory	New Schools	Major Projects Involving Additions to Existing Schools	Minor Projects Involving Additions to Existing Schools	New Student Places
	No.	No.	No.	No.
Newfoundland.....	13	1	4	3,870
Prince Edward Island.....	3	1	6	1,561
Nova Scotia.....	37	16	9	12,950
New Brunswick.....	8	4	44	5,488
Quebec.....	169	77	8	159,596
Ontario.....	338	78	45	217,899
Manitoba.....	4	11	60	6,742
Saskatchewan.....	19	7	1	16,124
Alberta.....	52	17	6	34,932
British Columbia.....	44	36	4	36,624
Yukon Territory.....	1	1	—	482
Northwest Territories.....	—	1	—	30
TOTALS.....	688	250	187	496,298

An intriguing exhibit resembling a cluster of metal umbrellas is actually a musical instrument that produces sounds like those of steel drums.



Ontario's Centennial Centre for Science and Technology, to be completed in 1969, is designed to increase public understanding of achievements and aims of science and technology and to interest young Canadians in careers in these fields. Its complex of buildings in Metro Toronto combine many functions of exhibition, trade fair, museum, school and university, devoted to the present and the future and with an appeal to all age groups.

Adult Education

A variety of opportunities is provided to adults for further academic, vocational and cultural experiences beyond the regular full-time school system for young people. Each province has developed its own programs, operated mainly by local school boards and provincial universities and supplemented by independent universities and private organizations. The Federal Government sponsors some adult education programs and provides grants-in-aid to the province for others.

A limited survey of adult education was conducted in 1965-66 (see p. 360), the sponsors covered reporting a total enrolment of 1,157,074. Of this enrolment, academic courses leading to a high school or university degree accounted for 25 p.c.; professional training, including university-sponsored refresher courses and technical, trade and business courses, provided under various auspices, accounted for 28 p.c.; health and social education courses including courses in marriage preparation, citizenship training, first aid, water safety, child care, nutrition, and courses designed to assist in the treatment or prevention of specific diseases accounted for 39 p.c.; and fine arts and other cultural subjects made up the remainder.

Many public and private institutions and organizations also sponsor informal public lectures, film showings, guided tours, musical and dramatic performances and similar activities of an educational nature for adults. Workshops, conferences and residential adult education, as well as regular courses, help to prepare those who staff these activities.

How Education Costs are Met

In 1966 about 10 p.c. of Canada's total national income was spent on formal education. Over 20 p.c. of all municipal, provincial and federal revenue went for education and of the amount so spent, the municipalities provided 28 p.c. and the provinces 48 p.c.

As stated on p. 334, the actual operation of public elementary and secondary schools is in the hands of the local elected or appointed school boards which determine the budgets and therefore the amount of taxes required for school purposes. In most cases, these taxes are levied and collected for the boards by the municipalities; however, in those areas where there is no municipal organization the school boards have the power to levy and collect taxes for school purposes. At present, local governments provide 50 p.c. of the cost of operating the public schools, provincial grants provide 48 p.c. and the remainder is obtained from various other sources. Except in Newfoundland, fees are almost non-existent. Four provinces—British Columbia, Alberta, Manitoba and Nova Scotia—pay operating grants on an equalization formula and thus ensure at least a minimum level of education throughout the province; the standard is determined either in terms of so much per pupil, or from an established salary scale for teachers with a prescribed teacher-pupil ratio, or by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain larger centres, there are three school-tax areas (centres). Consequently only about 2.2 p.c. of school revenue is provided by local taxation; the province provides about 91 p.c. and most of the remainder is paid by parents in the form of fees. In Prince Edward Island where there is no municipal organization outside of the cities of Charlottetown and Summerside, the school boards levy and collect property and poll taxes but the province provides about two thirds of the operating costs. Ontario and Saskatchewan make use of various equalization and incentive grants and New Brunswick uses a combination of a basic grant per pupil and special grants. Most provinces provide grants for school buildings and equipment, establish loan funds, and guarantee debentures for school purposes and assist in selling them.

In 1966-67, universities and colleges received 66 p.c. of their current operating funds from provincial governments and the Federal Government, 22 p.c. from fees, 2 p.c. from endowments and gifts and 10 p.c. from a variety of other sources. Private schools and colleges are normally supported by student fees, endowment income, gifts and income from sponsoring bodies.

Federal Contributions to Education

Some 60 Federal Government departments and agencies contribute to education in one way or another. As stated on p. 333, the Federal Government has no responsibility for the organization and administration of education. It has, however, a vital interest in the general level of education and skills of the population and the extent of the scientific research carried on in Canada, realizing the profound effect these factors exercise upon the development of the national economy.

Beginning with the 1967-68 fiscal year, the federal support to education underwent a significant change. The total federal contribution to education was increased substantially but the form of this support and the method of its distribution was altered in certain key areas. There were three important changes. (1) Operating grants to universities and colleges computed in the past at so many dollars per capita of provincial population (the 1966-67 rate was approximately \$5 per capita) were discontinued and the program replaced by a broader program of financial support to post-secondary education more advantageous to the provinces and explained more fully below. (2) With the expiry on Mar. 31, 1967, of the federal-provincial agreements concluded under the terms of the Technical and Vocational Training Act of 1961, these agreements, after six years of operation, were not renewed, except that the agreement for the training of the unemployed was extended to July 1, 1968, and the agreement on financing capital projects was maintained until each province will have received the increased maximum federal contribution stipulated by law. In place of the vocational training programs conducted under the expired agreements with the provinces, the Federal Government now pays the full cost of vocational training of adults, including living allowances, under the Adult Occupational Training Act (SC 1967,

c. 94). (3) The Federal Government announced, in general terms, its willingness to increase grants for specific research projects undertaken by individual professors and other researchers at universities.

In 1967-68, the Federal Government spent \$310,000,000 on vocational training. Of this total, \$85,900,000 was spent under the old agreements, mostly for the training of the unemployed, but also some small amounts for other programs being discontinued, and \$119,000,000 for capital projects. The remaining \$105,100,000 was spent on the new scheme of vocational training. During the same period, grants for specific research projects amounted to \$69,700,000, or 43.6 p.c. more than in the previous year. Thus, federal expenditures on these two programs amounted to almost \$380,000,000, about \$46,000,000 more than was spent in 1966-67 on the three major programs then in operation. This included operating grants to universities, now discontinued, which cost the federal treasury \$71,000,000 in 1966-67.

As a result of the federal-provincial conference of October 1966, the Federal Government undertook to provide increased support to education. Recognizing that education is a provincial responsibility, it decided to discontinue payment directly to universities of operating grants, and to expand its support beyond university education and include in its program all, or almost all, post-secondary education, i.e., the educational institutions and courses requiring for admission at least junior matriculation, or its equivalent, in each province. The provinces have been offered the choice of either a federal grant amounting to \$15 per head of population, or 50 p.c. of operating costs of post-secondary education, whichever is the greater. Implementing this proposal, Parliament passed, in March 1967, the Federal-Provincial Fiscal Arrangements Act, 1967, dealing with this program, and placed the responsibility for its administration upon the Department of the Secretary of State. Under the terms of this Act certain percentages of federal revenues plus required cash were to be transferred by the federal treasury to the provinces commencing with the 1967-68 fiscal year, and to continue for five years. It is estimated that when final provincial claims for 1967-68 are settled, the financial resources transferred to the provinces will amount to \$400,600,000, and estimates for 1968-69 are in excess of \$500,000,000.

The student loan program is operated under the Canada Student Loans Act (SC 1964, c. 24), assented to July 28, 1964, when \$40,000,000 was set aside to enable full-time students to borrow up to \$1,000 annually, interest-free for five years—the \$5,000 or less to be repaid with interest commencing six months after the student has graduated. Provision is made for the allocated amount to be increased year by year in proportion to the number of persons 18-24 years of age in the population. The purpose of the loan plan is to assist those students who, for financial reasons, would otherwise be prevented from getting a post-secondary education or would not be able to devote full time to their studies. These loans may be made only on the basis of certificates of eligibility issued by the participating province through the university or institute of technology concerned. There is no upper or lower age limit for eligibility. The loan scheme is operated by the chartered banks, the Federal Government guaranteeing the loans and paying the interest while the student is attending college. All provinces except Quebec participate; Quebec offers its own student assistance program for the benefit of Quebec residents.

The Act provides for basic allocations for each province, establishing the limit to which each may authorize loans under the Act. It also provides for supplementary allocations that may be used to compensate for differences in relative demand as between provinces, based on provincial population in the 18-24 year age group. The basic allocations for the year 1967-68 for participating provinces totalled \$45,700,000, in addition to which there was authority for discretionary allocations up to \$13,300,000, making a total maximum of \$59,000,000 authorized under the Act. Loans actually authorized amounted to \$57,100,000. In addition, federal payments to banks and other lending institutions in respect of interest on outstanding loans and certain claims arising out of the operation of this program amounted to \$6,462,000.

Under the Adult Occupational Training Act (SC 1967, c. 94), assented to on May 8, 1967, the Minister of Manpower and Immigration may enter into agreements with provinces to provide for the payment by Canada to the provinces of contributions in respect of the capital expenditures incurred by the provinces on occupational training facilities. These agreements, which are in effect the continuation of the previous agreements entered into under the discontinued Technical and Vocational Assistance Act of 1961, provide for extended and increased federal assistance in acquiring facilities for vocational training, including vocational high schools, technical institutes, trade and occupational centres.

The Act provides for federal contributions of 75 p.c. of the cost of approved projects up to the maximum amount of \$480 per head of the "youth population of the province in 1961", i.e., in the age group 15-19 years, as ascertained by the census. Beyond that limit, federal contributions of 50 p.c. are authorized for up to an additional amount of \$320 per capita of the "youth population" of 1961. The aggregate of all federal contributions made to the provinces since Apr. 1, 1961, under the terms of the "former agreement" are to be included in determining the level and limit of the federal contributions in respect of capital projects. There is no time limit stipulated for this program.

As the 1961 population aged 15-19 years numbered 1,432,559, the maximum federal contribution for vocational training facilities could amount to a little more than \$1,146,000,000 if all the provinces took advantage of this program to the limit established by the Act. The estimated value of all provincial projects approved by the federal authorities during the period Apr. 1, 1961 to Mar. 31, 1968, amounted to over \$1,677,000,000, the federal contribution being almost \$918,000,000 when all projects are completed. In the same period the actual cash payments made by the federal treasury to the provinces amounted to almost \$711,500,000.

In 1966, the Federal Government inaugurated another program of massive financial support to the provinces for the purpose of providing badly needed facilities for training professional personnel in health services, to be administered by the Department of National Health and Welfare. The Health Resources Fund Act (SC 1962, c. 42) received assent on July 11, 1966. In accordance with a recommendation of the Royal Commission on Health Services in 1964, the Act provides for the establishment of a Health Resources Fund to assist financially in the planning, acquisition, construction, renovation and equipping of health training facilities, defined to mean any school, hospital or other institution for the training of persons in the health professions or any occupations associated with the health professions, or for the conducting of research in the health field, but excluding any residential accommodation.

The Health Resources Fund was established by the Act in the amount of \$500,000,000 to be applied to costs incurred between Jan. 1, 1966 and Dec. 31, 1980, a period of 15 years. The \$500,000,000 Fund was divided under the Act into three parts: \$300,000,000 was allocated to the provinces on a per capita basis; \$25,000,000 was allocated to the four Atlantic Provinces for joint projects; and \$175,000,000 remained to be allocated by the Governor in Council. Contributions are payable to the provinces in amounts of up to 50 p.c. of the costs of the projects approved by the Minister's Advisory Committee as part of a five-year plan for the development of health training facilities in a province.

During 1966-67, the first year of operation of the Fund, \$4,705,000 was paid to the provinces in respect of various approved projects. In 1967-68, further payments amounting to \$32,645,000 were made by the federal treasury for a total up to Mar. 31, 1968, of \$37,350,000. Most of the projects financed so far involve training facilities in universities or institutions connected with or operated by schools of medicine. However, in 1967-68, \$2,264,000 was spent on projects in institutions not directly related to universities and was therefore classified as being spent on post-secondary vocational training facilities.

The Federal Government through the Canada Council in 1957 provided an amount of \$100,000,000, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining \$50,000,000 was to be used to assist in the development of the arts, humanities and social sciences mainly through scholarships (see pp. 374-375).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the schools. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the Department of Manpower and Immigration and other agencies. Some Departments such as Agriculture, Health and Welfare, etc., provide materials and publications of value in the school programs, and the National Museums, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs (see pp. 364-374).

More directly, the Federal Government is responsible for the education of the Eskimos, Indians and white persons in the Territories (see p. 337), the Indians on the reserves, prisoners in penitentiaries, members of the Armed Services and their dependants and in-service training for permanent personnel. It also assists in citizenship training and other out-of-school informal education activities.

The Canadian International Development Agency (formerly the External Aid Office) is responsible for the operation and administration of external assistance programs, including educational assistance to Commonwealth and other countries. In the academic year 1967-68, such assistance consisted of 579 teachers including teacher college personnel, 103 university staff members sent out individually or in teams, and 350 (calendar year 1967) technical advisers in vocational education, health and welfare, government administration and other areas. More than 7,000 persons have been trained in Canada since 1950; the number enrolled in 1967-68 was 3,469, compared with 2,964 in the previous year. The objective of this training is the development of an indigenous training capability in the emerging countries and persons trained in Canada are expected to return to their homelands to convey their skills to others.

From 1950 to 1968 Canada's expenditures abroad on capital projects and technical assistance in aid of education amounted to about \$111,950,000. Capital assistance includes the building and equipping of educational institutions; major projects include Canada Hall, a residence for the University of the West Indies in Trinidad; technical institutes in Ghana and Nigeria; technical equipment to schools in Malaysia and Tanzania; and audio-visual equipment, handicraft supplies and other teaching aids to various developing countries.

In 1967-68, under the Commonwealth Scholarship and Fellowship Plan which began in 1960, some 334 Commonwealth students were studying in Canada (see also p. 150). Canada has a number of voluntary agencies interested in aiding students from other countries, several of which receive some assistance from the Federal Government.

External Educational Assistance

Some 10,000-15,000 full-time university students, a large proportion of them in the graduate schools, come to Canada each year from many countries; the largest number are from the United States although the number from Commonwealth and other countries is increasing very rapidly. The external enrolment in 1968 represented about 5.9 p.c. of the total enrolment. The number of such students is about equal to the number of Canadians studying abroad. (See Table 9, p. 356.)

Section 3.—Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be classified as either publicly controlled or private. The publicly controlled schools include: the public and separate schools under local school boards—by far the most numerous group; provincial schools which at this level are limited mainly to trade schools, correspondence courses, and special schools for the blind and deaf; and federal schools for Indians, for children in the Northwest Territories, and for the children of members of the Armed Forces overseas. Private schools may be academic, business (commercial), trade, technical, correspondence or even a combination of these.

Institutions of higher education may be provincial, church, independent universities and colleges, or federal military colleges. In addition there are community colleges, teachers' colleges, theological institutions and schools for such specialized fields as nursing, agriculture, paper-making, fisheries, graphic and fine arts, languages, etc. Some of these are provincial and some private.

Most organized classes for adults operate under the auspices of universities, colleges, local school boards, churches or community organizations.

Table 1 shows full-time enrolment at all levels each year for the period 1958-59 to 1967-68 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1966-67. In all types of schools the number of pupils has increased each year over that period. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counter-balanced by the closing of many one-room rural schools.

1.—Full-Time Enrolment in Elementary and Secondary Schools, and in Universities and Colleges, School Years 1958-59 to 1967-68

School Year	Elementary and Secondary Schools (Publicly Controlled, Private and Federal)			Universities and Colleges
	Elementary Grades ¹	Secondary Grades	Total	
	No.	No.	No.	No.
1958-59.....	3,164,460	662,229	3,826,689	94,994
1959-60.....	3,293,676	715,218	4,008,894	101,934
1960-61.....	3,412,166	789,114	4,201,280	113,864
1961-62.....	3,514,226	892,094	4,406,320	128,894
1962-63.....	3,604,251	983,699	4,587,950	141,388
1963-64.....	3,708,612	1,074,184	4,782,796	158,388
1964-65.....	3,822,649 ²	1,145,532 ²	4,968,181 ²	178,238
1965-66.....	3,922,337 ²	1,205,386 ²	5,127,723 ²	205,888
1966-67.....	4,023,960 ³	1,264,719 ³	5,288,679 ³	232,672
1967-68.....	4,127,178 ⁴	1,327,627 ⁴	5,454,805 ⁴	261,207

¹ From kindergarten to and including grade eight. ² Includes preliminary figures for Quebec. ³ Includes preliminary figures for Quebec and an estimate for New Brunswick public schools. ⁴ Includes preliminary figures for Quebec and Manitoba.

**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,
by Province, School Year 1966-67**

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—						
Public and Separate—						
Schools.....	1,164	374	853	999	4,570 ^p	5,720
Teachers.....	5,644	1,318	8,033	6,927	68,200 ^p	73,943
Pupils.....	148,352	28,597	200,681	186,750 ^p	1,413,245	1,800,897
Overseas (DND)—						
Schools.....	...	...	...	...	...	...
Teachers.....	...	...	...	...	...	...
Pupils.....	...	...	...	...	...	...
Indian— ¹						
Schools.....	—	1	6	8	26	90
Teachers.....	—	2	27	25	155	277
Pupils.....	—	30	750	638	3,640	6,495
Blind—						
Schools.....	—	—	1	—	3	1
Teachers.....	—	—	25	—	57	37
Pupils (home province).....	31	6	79	34	259	205
Deaf—						
Schools.....	1	1	1	—	5	2
Teachers.....	19	4	46	—	176	139
Pupils (home province).....	121	18	153	103	1,007	813
Private—						
Schools.....	4	2	22	11	780 ^p	237
Teachers.....	82	20	243	104	6,300 ^p	3,240
Pupils.....	1,175	345	4,508	1,389	94,500 ^p	46,072
Higher Education—						
Institutions ²	1	2	14	4	14	40
Students (full-time university grade).....	3,893	1,139	9,806	6,862	75,070	68,589
Teacher-Training—						
Teachers' Colleges—						
Institutions.....	—	—	1	1	61	13
Teachers (full-time).....	—	—	39	57	901	298
Students (full-time).....	—	—	578	1,114	14,639	6,534
Faculties of Education—						
Faculties.....	1	2	5	3	4	3
Teachers (full-time).....	34	6	26	29	166	141
Students (full-time) ³	1,817	145	415	347	2,529	1,148
Vocational Education—						
Enrolment—						
Publicly sponsored vocational courses.....	7,333	916	8,855	6,908	64,157	93,261
Trade courses (apprentices) ⁴	1,114	131	1,442	3,683	..	5,194
Vocational high school courses..	210	788	1,345	9,285	..	196,885
Post-secondary courses.....	541	—	350	441	12,472	10,267
Private business schools.....	5	5	838	891	..	9,699
Private trade schools.....	5	—	287	119	4,412	11,075
Adult Education—⁴						
Part-Time Enrolment—						
Universities (1965-66).....	3,345	587	15,397	6,777	90,477	93,739
Provincial government departments (1965-66) ⁵.....	..	852	10,651	1,085	99,618	58,276
Federal Government departments (1965-66).....	..	..	..	..	..	..
Health departments (1965-66)...	2,750	20	31,572	55,575	542	142,978
Other (1965-66).....	2,854	706	3,841	4,994	82,091	93,003 ⁶

For footnotes, see end of table, p. 350.

**2.—Schools, Teachers and Enrolment for All Types of Education Institutions,
by Province, School Year 1966-67—concluded**

Item	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—						
Public and Separate—						
Schools.....	1,253	1,225	1,217	1,414	89	18,878
Teachers.....	9,432	10,923	16,358	16,966	582	218,326
Pupils.....	224,531	242,137	372,894	445,633	11,132	5,054,849
Overseas (DND)—						
Schools.....	...	...	...	...	...	19
Teachers.....	...	...	...	...	...	474
Pupils.....	...	...	...	...	...	8,439
Indian— ¹						
Schools.....	63	65	28	68	1	356
Teachers.....	260	217	171	202	3	1,339
Pupils.....	6,683	5,156	3,625	5,194	79	32,290
Blind—						
Schools.....	—	—	—	1	—	6
Teachers.....	—	—	—	19	—	138
Pupils (home province).....	22	26	21	92	1	776
Deaf—						
Schools.....	2	1	1	1	—	15
Teachers.....	27	26	23	28	—	488
Pupils (home province).....	163	162	122	227	10	2,899
Private—						
Schools.....	53	17	36	139	—	1,301
Teachers.....	557	166	310	1,253	—	12,275
Pupils.....	10,244	2,227	5,324	24,762	—	190,546
Higher Education—						
Institutions ²	12	15	14	13	—	129
Students (full-time university grade).....	12,389	11,577	16,983	26,364	—	232,672
Teacher-Training—						
Teachers' Colleges—						
Institutions.....	—	—	—	—	—	76
Teachers (full-time).....	—	—	—	—	—	1,295
Students (full-time).....	—	—	—	—	—	22,865
Faculties of Education—						
Faculties.....	2	2	2	4	—	28
Teachers (full-time).....	47	110	206	213	—	978
Students (full-time) ³	1,148	3,266	4,867	4,045	—	19,727
Vocational Education—						
Enrolment—						
Publicly sponsored vocational courses.....	12,059	9,493	10,460	12,827	438	226,707
Trade courses (apprentices) ⁴	1,212	1,723	5,168	8,273	—	27,940
Vocational high school courses..	5,851	4,811	16,636	21,261	505	257,577
Post-secondary courses.....	868	640	3,388	2,050	—	31,017
Private business schools.....	2,964	1,863	2,576	4,568	—	23,399
Private trade schools.....	935	580	1,697	2,843	—	21,948
Adult Education—⁵						
Part-Time Enrolment—						
Universities (1965-66).....	12,122	22,900	47,075	25,474	—	317,893
Provincial government departments (1965-66) ⁷	1,860	4,415	17,222	74,815	191	268,985
Federal Government departments (1965-66).....	—	—	—	—	—	20,649
Health departments (1965-66)...	21,740	18,645	11,012	17,744	—	302,578
Other (1965-66).....	8,680	11,140	13,754	21,169	—	246,969 ⁸

¹ Day, residential and hospital schools administered by the Federal Government. ² Includes affiliated colleges and schools of post-matriculation. ³ Also included with "Higher Education". ⁴ Includes indentured apprentices taking full-time, part-time and correspondence courses. ⁵ Included with Nova Scotia. ⁶ Includes enrolment in courses sponsored by public libraries, business colleges and trade schools, teacher-training institutions, museums and art galleries. ⁷ Limited survey only; does not include agricultural and vocational courses. ⁸ Includes 4,737 enrolments in private trade schools, not distributed by province.

An attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditure on cultural activities related to education such as adult night classes, fine arts and handicraft courses, and libraries, museums and art galleries. Such expenditure for the year 1965 is presented in Table 3, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1963-65 are given at pp. 354-355 and financial statistics for universities and colleges at pp. 358-359.

3.—Expenditure on Formal Education, Vocational Training and Related Cultural Activities, by Source of Funds, 1965

Type of Education	Local Taxation	Pro- vincial Govern- ments ¹	Federal Govern- ment	Fees	Other Sources	Total Expend- iture
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Formal Education—						
Elementary and Secondary—						
Public schools.....	1,034,764	1,075,156	87,370	9,641	41,262	2,248,193
Handicapped outside the public schools.....	188	16,802	265	407	71	17,733
Government correspondence schools.....	—	2,106	288	314	3	2,711
Reform schools.....	—	2,791	—	—	—	2,791
Indian and Eskimo education.....	—	—	52,924	—	—	52,924
Private schools.....	—	—	—	55,253	20,535	75,788
Totals, Elementary and Secondary.....	1,034,952	1,096,855	140,847	65,615	61,871	2,400,140
Teacher-training outside universities.....	—	19,404	3	1,040	361	20,808
Higher Education—						
Current operating expenditure.....	552	187,609	29,745	110,805	49,614	378,325
Plant expenditure from current funds.....	597	163,709	1,736	—	80,832	246,874
Research in universities.....	25	5,960	31,282	—	15,386	52,653
Defence colleges.....	—	—	8,407	—	—	8,407
Scholarships.....	—	21,617	14,244	—	7	35,868
Other.....	—	29	1,693	—	—	1,722
Totals, Higher Education.....	1,174	378,924	87,107	110,805	145,839	723,849
Undistributable expenditure.....	—	—	13,957	—	—	13,957
Totals, Formal Education.....	1,036,126	1,495,183	241,914	177,460	208,071	3,158,754
Vocational Training—						
Technician training.....	—	25,599	3,934	1,158	490	31,181
Apprenticeship.....	—	7,777	920	715	166	9,578
Trade training.....	—	20,322	16,013	896	1,249	38,480
Technical and vocational teachers.....	—	824	429	16	—	1,269
Unemployed.....	—	13,176	23,980	138	7	37,301
Handicapped.....	—	361	800	1	—	1,162
Health and welfare personnel.....	—	583	195	—	—	758
Inmates of reform institutions.....	—	901	687	—	—	1,588
Indians and Eskimos.....	—	—	720	—	—	720
Other vocational training costs.....	—	—	8,429	—	365	8,794
Capital expenditures.....	—	8,324	41,071	—	—	49,395
Private business colleges.....	—	—	—	6,186	444	6,630
Totals, Vocational Training.....	—	77,847	97,178	9,110	2,721	186,856
Totals, Formal Education and Vocational Training.....	1,036,126	1,573,030	339,092	186,570	210,792	3,345,610
Cultural Activities—²						
Adult education, including night schools.....	—	2,876	281	7	12	3,176
Fine arts.....	—	3,826	3,280	29	40	7,175
Handicrafts.....	—	225	—	5	—	230
Libraries ³	26,817	7,723	2,826	—	2,087	39,453
Archives, museums and art galleries.....	—	6,263	3,637	30	66	9,996
National Film Board productions.....	—	—	1,785	—	—	1,785
Cultural societies—grants.....	—	—	243	—	—	243
UNESCO grant.....	—	—	753	—	—	753
Other cultural expenditures.....	—	1,968	484	—	1	2,453
Totals, Cultural Activities.....	26,817	22,881	13,289	71	2,206	65,264

¹ Includes the Yukon and Northwest Territories.

² Limited to reported expenditures of public funds.

³ Includes capital costs from current funds.

Subsection 1.—Elementary and Secondary Schools

Control.—As stated on pp. 334-335, direct control and operation of public schools is by school boards, which operate under school laws and regulations. School boards may be boards of larger units, local boards within larger units or independent boards for rural schools, towns or cities, the members of which may be all elected, partly elected and partly appointed or all appointed; some schools are operated by trustees appointed by the province in lieu of a board. As their designations imply, private schools are administered by private organizations and federal schools by federal authorities.

Table 4 gives the number of active independent public school boards and school trustees in each province as at December 1967.

4.—Active School Boards and School Trustees, by Province, as at December 1967

Province or District	Independent School Boards	School Boards Composed of Trustees who are—			School Trustees
		All Elected	Some Appointed Some Elected	All Appointed	
	No.	No.	No.	No.	No.
Newfoundland.....	237	—	—	237	2,580
Prince Edward Island.....	332	314	16	2	1,196
Nova Scotia.....	77	—	—	77	455
New Brunswick.....	33	—	33	—	441
Quebec—					
Roman Catholic.....	1,251	1,249	2	—	6,557
Protestant.....	93	93	—	—	469
Ontario ¹	1,446	1,197	48	201	7,610
Manitoba.....	162	162	—	—	872
Saskatchewan.....	134	134	—	—	845
Alberta.....	201	201	—	—	897
British Columbia.....	85	85	—	—	541
Mackenzie District.....	3	3	—	—	11
Totals.....	4,054	3,438	99	517	22,474

¹ As at September 1967.

Enrolment.—Table 5 shows enrolment of all elementary and secondary pupils in Canada and in Department of National Defence schools overseas, and classifies them by grade. Private schools and schools for Indian and Eskimo children are included in these figures. Enrolment in private schools accounted for 3.6 p.c. of the total 1966-67 enrolment at the elementary and secondary levels. Schools operated by Federal Government departments, that is, schools for Indian children, schools in the Territories and overseas schools for children of Service personnel, accounted for about 0.9 p.c. of the total.

School enrolment has been increasing in recent years much more rapidly than the general population. Total school enrolment in 1966-67 represented a 3.1-p.c. increase over the previous year. In comparison, the annual rates of increase in total school enrol-

ment for the three previous years ranged from 3.2 p.c. to 4.1 p.c.; the country's population during the same period increased annually by amounts varying from 1.7 p.c. to 1.8 p.c.

**5.—Enrolment in Publicly Controlled, Private and Federal Schools, by Grade,
School Year 1966-67**

Grade	New- foundland	Prince Edward Island	Nova Scotia	New Brunswick ¹	Quebec ²	Ontario
	No.	No.	No.	No.	No.	No.
Kindergarten.....	8,381	61	18,732	68	61,180	136,500
Grade 1.....	15,676	3,052	18,131	17,626	145,496	176,512
Grade 2.....	14,964	2,750	18,141	16,623	147,757	164,215
Grade 3.....	14,568	2,692	18,221	16,344	146,878	156,485
Grade 4.....	15,110	2,785	18,560	16,485	146,390	148,597
Grade 5.....	14,813	2,795	18,270	16,628	139,631	146,768
Grade 6.....	14,131	2,662	17,949	16,229	135,514	143,523
Grade 7.....	13,457	2,568	18,384	15,989	125,385	141,852
Grade 8.....	12,369	2,551	16,190	13,339	123,935	132,184
Grade 9.....	11,328	2,202	14,617	12,223	112,000	132,584
Grade 10.....	8,154	1,835	11,723	9,825	91,402	113,053
Grade 11.....	6,137	1,615	10,002	9,052	71,200	92,619
Grade 12.....	63	1,148	5,299	7,468	20,300	78,484
Grade 13.....	—	—	—	50	600	38,963
Auxiliary.....	161	143	1,269	350	23,072	30,437
Special.....	215	113	451	578	23,200	20,688
Totals.....	149,527	28,972	205,939	168,777	1,513,940	1,853,464

Grade	Manitoba	Saskat- chewan	Alberta	British Columbia	Y.T. and N.W.T. ³	DND Schools Overseas	Canada
	No.	No.	No.	No.	No.	No.	No.
Kindergarten.....	7,731	3,947	733	15,961	779	1,034	255,107
Grade 1.....	24,267	25,247	39,497	47,806	1,787	1,214	516,211
Grade 2.....	22,168	23,309	38,377	44,860	1,460	1,007	495,640
Grade 3.....	21,096	22,611	36,602	43,170	1,395	916	480,978
Grade 4.....	21,373	22,206	35,791	41,130	1,240	841	470,508
Grade 5.....	21,007	21,998	33,950	40,274	975	748	457,857
Grade 6.....	20,592	21,886	33,886	39,220	797	619	447,008
Grade 7.....	21,142	22,027	33,552	38,538	725	517	434,136
Grade 8.....	19,207	19,869	30,420	36,739	555	439	407,797
Grade 9.....	18,576	20,028	29,450	34,017	415	374	387,814
Grade 10.....	15,521	17,449	25,018	30,369	351	289	324,989
Grade 11.....	14,553	14,103	21,432	27,047	253	191	268,204
Grade 12.....	11,682	12,836	23,079	21,334	174	156	182,023
Grade 13.....	—	—	—	2,364	14	94	42,085
Auxiliary.....	2,518	1,467	42	7,467	40	—	66,966
Special.....	25	537	14	5,293	242	—	51,356
Totals.....	241,458	249,520	381,843	475,589	11,211³	8,439	5,288,679

¹ Includes an estimate for public schools.

² Includes Ungava District of Quebec.

³ Total for

Yukon Territory was 3,444 pupils.

Teaching Staffs.—Between the school years 1946-47 and 1966-67, the number of teachers in the publicly controlled schools of the ten provinces increased from 78,789 to 218,044 or 177 p.c., the number of men teachers increased by 289 p.c., and the number of women teachers by 141 p.c.

After moderate increases from 1947 to 1960, median experience of teachers declined over the following six years, a trend attributable to the large number of new teachers entering the profession. Because most of these new teachers have been employed in the cities, median experience there has declined rapidly from a high in 1946 of 16.4 years in eight provinces (excluding Quebec) to a low in 1966 of 6.3 years in nine provinces (excluding Quebec). The median experience of all teachers did not show such a pronounced decline, ranging between 6.9 and 8.3 years up to 1960 and then declining to a new low of 6.6 years for nine provinces (excluding Quebec).

The median salary in 1966-67 for all teachers in nine provinces (excluding Quebec) was \$5,567, representing an increase of 285 p.c. over the median salary in 1946-47 of \$1,446, based on data from nine provinces (excluding Quebec throughout and Newfoundland prior to 1948-49). The rate of increase from one year to the next has fluctuated considerably, ranging from 16.8 p.c. between the school years ended in 1947 and 1948 to 2.4 p.c. between 1962 and 1963. The increase between 1965 and 1966 was 5.3 p.c. and that between 1966 and 1967 was 6.7 p.c.

6.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1966-67

Province	Number		Median Salary		Median Experience		University Graduates	
	Male	Female	Male	Female	Male	Female	Male	Female
TEACHING ELEMENTARY GRADES ¹								
			\$	\$	yrs.	yrs.	p.c.	p.c.
Newfoundland.....	1,126	3,227	3,380	3,282	3.0	4.0	12.0	4.0
Prince Edward Island.....	90	863	3,900	3,341	6.8	8.9	14.4	1.6
Nova Scotia.....	589	4,887	5,090	3,936	5.8	11.7	41.1	13.5
New Brunswick.....	486	4,172	4,067	3,505	3.4	9.3	26.5	5.1
Quebec.....	12,137	35,510	5,759	4,879	5.8	6.0	23.8	6.5
Ontario.....	1,353	4,739	4,702	4,303	5.8	6.2	16.9	7.3
Manitoba.....	1,579	5,613	5,633	4,825	5.4	6.6	23.2	5.4
Saskatchewan.....	1,768	7,691	6,579	5,420	7.3	9.4	50.3	15.3
Alberta.....	2,631	7,131	6,717	5,771	7.5	6.7	46.1	17.7
British Columbia.....								
TEACHING SECONDARY GRADES ²								
			\$	\$	yrs.	yrs.	p.c.	p.c.
Newfoundland.....	860	431	5,040	4,507	6.5	8.9	51.2	36.9
Prince Edward Island.....	182	183	5,125	4,403	4.5	8.9	59.3	35.0
Nova Scotia.....	1,337	1,220	6,228	5,804	7.1	11.5	73.0	57.9
New Brunswick.....	1,255	1,014	5,772	4,871	5.9	9.0	54.7	36.6
Quebec.....	16,802	9,494	7,956	6,798	5.6	4.7	76.5	71.2
Ontario.....	2,055	1,285	7,156	5,950	7.4	7.1	75.2	62.0
Manitoba.....	2,509	1,222	7,781	6,815	9.5	10.1	70.2	51.2
Saskatchewan.....	4,347	2,552	7,594	6,333	7.1	9.1	75.7	56.1
Alberta.....	4,816	2,388	8,123	7,075	9.4	8.9	77.1	70.1
British Columbia.....								

¹ Comprises teachers and principals instructing or supervising elementary grades only, and those instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary if they teach in elementary public or separate schools.

² Comprises teachers and principals instructing or supervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary only if they teach in secondary schools.

Financial Support.—Table 7 shows details of the income of public school boards for the years 1963-65. In most provinces, local taxation is the most important source of revenue, followed by provincial government grants. In 1965, all other sources of income accounted for 2 p.c. of total current revenue. (See also p. 344.)

Not all provinces collect and publish figures for debenture indebtedness, although it is the usual practice in all provinces, except Newfoundland, for boards to finance new construction, at least in part, by issuing debentures. Provincial aid toward capital expenditures may take the form of a percentage of total cost, a fixed amount per classroom or assistance with debenture debt charges. Many provinces guarantee debentures issued by school boards and others assist in marketing them.

7.—Income of School Boards for Publicly Controlled Elementary and Secondary Schools, by Province, 1963-65

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation.

Province and Year	Income from—			Total Current Revenue	Debenture Indebtedness ¹
	Provincial Government Grants	Local Taxation	Other Sources		
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1963	18,746	363	2,262	21,371	..
.....1964	20,790	455	2,671	23,916	..
.....1965	22,674	617	2,809	26,100	..
Prince Edward Island.....1963	3,502	2,149	46	5,697	..
.....1964	3,834	2,207	63	6,104	..
.....1965	4,107	2,500	104	6,711	..
Nova Scotia.....1963	21,299	24,740	523	46,562	55,104
.....1964	23,889	26,605	604	51,098	55,594
.....1965	25,860	28,451	616	54,927	56,577
New Brunswick.....1963	11,388	25,015	442	36,845	28,423
.....1964	10,940	27,062	356	38,358	28,514
.....1965	10,020	31,177	662	41,859	26,957
Quebec.....1963	197,678	190,398	18,195	406,271	485,737
.....1964	268,508	219,000	9,000	496,508	..
.....1965	291,292	289,600	10,000	590,892	..
Ontario.....1963	233,689	345,371	20,011	599,071	732,917
.....1964	298,316	368,747	19,057	686,120	758,427
.....1965	332,034	395,985	21,403	749,422	810,957
Manitoba.....1963	28,527	41,389	44	69,960	71,252
.....1964	30,132	43,836	378	74,346	74,214
.....1965	32,635	48,039	240	80,914	77,640
Saskatchewan.....1963	37,449	46,156	1,624	85,229	55,750
.....1964	38,437	49,150	1,772	89,359	61,154
.....1965	42,815	53,795	2,338	98,948	65,784
Alberta.....1963	76,068	71,036	1,617	148,721	152,779
.....1964	70,925	76,243	1,442	148,610	160,491
.....1965	78,470	82,238	1,801	162,509	175,947
British Columbia.....1963	68,698	77,692	2,720	149,110	..
.....1964	71,718	88,286	3,990	163,994	..
.....1965	77,500	101,807	4,395	183,702	..

¹ Net figures, after deduction of sinking funds.

Subsection 2.—Universities and Colleges

Institutions.—An institution of higher education in Canada is generally defined as one that offers one or more years of work beyond the most advanced high school grade in the province in which it is located, with all or part of the work offered being acceptable for credit toward a university degree or equivalent diploma. The definition thus excludes institutions offering technical and vocational post-high school courses for which credit is not given.

In 1967-68 there were nearly 400 institutions of higher education in Canada, of which about 60 have degree-granting powers (not including about 20 that confer degrees in theology only).

Enrolment.—Full-time university-grade enrolment continues to increase year by year and indications are that enrolments may well reach the 400,000-mark in another three

years. Table 8 shows full-time enrolment by province for the academic years ended 1965-68. In addition to full-time students, there were about 99,000 part-time university-grade students (including over 10,600 graduate students) in attendance during the regular 1967-68 winter session, and an estimated 6,000 students take university-grade credit correspondence courses each year. University-grade summer school enrolment was over 85,000 in 1968.

8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1965-68

Province	1964-65		1965-66		1966-67		1967-68	
	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only	Total	Graduate Only
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	2,652	51	3,168	62	3,893	69	4,473	149
Prince Edward Island.....	802	—	924	—	1,139	—	1,369	—
Nova Scotia.....	8,509	400	9,457	460	9,806	522	10,501	680
New Brunswick.....	5,773	305	6,371	383	6,862	439	7,927	544
Quebec.....	59,400	4,641	67,316	5,810	75,070	6,500	82,610	7,662
Ontario.....	50,793	5,424	58,983	6,859	68,589	7,727	79,089	9,782
Manitoba.....	9,172	531	11,069	600	12,389	687	13,426	795
Saskatchewan.....	9,603	337	10,707	407	11,577	556	12,697	646
Alberta.....	12,977	1,048	14,749	1,304	16,983	1,603	19,688	1,924
British Columbia.....	18,557	1,060	23,144	1,311	26,364	1,616	29,427	2,005
Totals.....	178,238	13,797	205,888	17,196	232,672	19,719	261,207	24,187

Foreign enrolment has risen considerably during the past decade, with a larger proportion of students from countries other than the United States and Britain coming to Canadian institutions, as shown in Table 9. The United States, Hong Kong, France, Trinidad and Tobago, India and Britain each accounted for over 500 students, and Pakistan, Malaysia, Viet-Nam, Nigeria, Jamaica, the Republic of China, Japan, Germany, Guyana, Formosa, Ghana, Lebanon, Bermuda, Australia and Haiti contributed from 100 to 400 each. About 150 other countries or territories were represented in the figures.

9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and Britain, Academic Years Ended 1961-68

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—				Enrolment from Other Countries in Canada		Canadians Studying in—	
		United States	Britain	British West Indies	Other Countries	From all Countries	From British Commonwealth Only	United States ¹	Britain ²
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1961.....	113,864	2,362	582	1,210	3,097	7,251	3,294	6,058	502
1962.....	128,894	2,660	577	1,251	3,412	7,900	3,552	6,571	559
1963.....	141,388	2,845	650	1,153	3,870	8,518	3,763	7,004	657
1964.....	158,388	3,193	687	1,214	4,396	9,490	4,202	8,458	652
1965.....	178,238	3,283	715	1,154	5,002	10,154	4,429	9,253	657
1966.....	205,888	3,395	886	1,064	5,939	11,284	5,021	9,755	680
1967.....	232,672	3,549	851	1,124	7,419	12,943	5,987	12,117	660
1968.....	261,207	3,910	1,042	1,202	9,202	15,356	7,238	12,144	742

¹ Data from the Institute of International Education, New York.

² Data from the Association of Commonwealth Universities, London, England.

Graduates.—Table 10 gives figures for graduates in most faculties for the academic years ended 1966-68.

10.—Graduates from Universities and Colleges, Academic Years Ended 1966-68

NOTE.—Figures for 1920-36 are given in the 1938 Year Book, pp. 993-997, and for 1937-65 in the corresponding table of subsequent editions.

Field of Study	1965-66		1966-67		1967-68	
	Total	Female	Total	Female	Total ¹	Female ¹
	No.	No.	No.	No.	No.	No.
Graduates in Arts, Pure Science and Commerce	23,009	7,265	27,533	9,211	30,717	10,004
Bachelors of Arts ²	17,565	6,606	21,452	8,306	23,364	8,870
Bachelors of Science (in Arts) ³	3,606	592	4,308	809	5,414	1,048
Bachelors of Commerce ⁴	1,838	67	1,773	96	1,939	86
Graduates in Applied Science	2,496	20	2,664	15	2,778	24
Bachelors of Applied Science in Engineering...	2,241	15	2,420	11	2,488	19
Bachelors of Architecture.....	139	5	132	3	204	5
Bachelors of Forestry.....	116	—	112	1	86	—
Graduates in Agriculture, Veterinary Science and Household Science	951	453	1,073	497	1,060	538
Bachelors of Agricultural Science.....	441	28	508	26	492	34
First degrees in Veterinary Science.....	90	7	103	5	94	10
Bachelors of Household Science.....	420	418	467	466	494	494
Graduates in Education, Library Science and Social Service	7,395	3,408	7,590	3,799	8,022	4,118
First degrees in education or pedagogy.....	6,080	2,828	6,496	3,300	6,569	3,407
Librarian degrees and diplomas.....	337	234	309	229	396	287
Physical education first degrees and diplomas..	588	124	654	200	679	224
Social service degrees and diplomas.....	390	222	131	70	378	200
Graduates in Medicine and Related Studies	2,409	1,104	2,715	1,277	2,773	1,373
Medical doctors.....	788	96	940	107	882	81
Dentists.....	304	15	310	18	224	11
Pharmacists.....	374	130	331	105	458	159
First degrees in nursing.....	662	655	810	796	889	867
Physiotherapy and occupational therapy.....	209	205	248	242	259	249
Chiropractic.....	37	1	35	4	26	3
Optometry.....	35	2	41	5	35	3
Graduates in Law and Theology	1,606	63	1,796	72	1,804	169
First degrees and equivalent diplomas in law..	932	52	1,041	55	1,166	76
Roman Catholic theological colleges.....	421	2	424	2	347	37
Protestant theological colleges.....	253	9	331	15	291	56
Other First Degrees and Equivalent Diplomas	604	347	467	266	542	324
Bachelors of Fine and Applied Arts.....	24	13	80	52	53	29
Bachelors of Interior Design.....	18	14	14	11	16	8
Journalism.....	50	21	57	26	53	39
Bachelors of Music.....	159	102	171	114	205	141
Others.....	353	197	145	63	215	107
Graduate and Honorary Degrees	6,184	1,092	7,361	1,373	8,308	1,524
Honorary doctorates.....	254	20	321	24	297	17
Doctorates in course.....	697	76	788	60	1,048	100
Masters of Arts ⁵	2,654	581	3,199	780	3,581	928
Masters of Science ⁶	1,441	122	1,764	193	2,106	201
Licences ⁷	1,138	293	1,289	316	1,276	278

¹ The numbers of degrees granted by two universities, not available for 1967-68, were estimated on the basis of 1960-67 figures. ² Includes Bachelors of Letters and Social Science. ³ Some institutions include Science degrees in Arts. ⁴ Includes Bachelors of Accounting and Secretarial Science. ⁵ Includes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In some institutions, M.Sc. degrees are included with M.A.s. ⁶ Includes M.A.Sc., M.S.A., M.S.A., M.Sc.F., M. Arch., M.V.Sc., M.Sc. Dent., M. Surgery (where conferred separately) as well as M.Sc. ⁷ The "Licence" in the French-language universities is the next degree following the Bachelor.

Teaching Staffs.—Table 11 shows the trend in university teaching staffs since 1960.

11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1960-69

NOTE.—Figures are estimates based on returns from institutions representing about 50 p.c. of the total enrolment and include some research personnel and junior and sessional lecturers and assistants.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1960.....	9,200	1965.....	14,300
1961.....	9,755	1966.....	15,900
1962.....	10,540	1967.....	18,000
1963.....	11,670	1968.....	20,700
1964.....	12,940	1969.....	23,000

Table 12 gives median salaries, by rank and region, for the staffs of 19 major institutions for 1967-68.

12.—Median Salaries of Teachers at 19 Institutions, Academic Year 1967-68

NOTE.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta, Calgary and British Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario and Ontario Institute for Studies in Education; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison and New Brunswick.

Rank	Region				Staff Complement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	\$	\$	\$	\$	No.
Deans.....	17,575	23,084	22,100	22,042	145
Professors.....	15,262	18,072	17,667	17,743	1,897
Associate professors.....	12,071	13,451	13,620	13,394	2,448
Assistant professors.....	9,560	10,636	10,595	10,513	3,244
Instructors and lecturers.....	7,590	8,376	8,200	8,229	1,385
Totals, All Ranks.....	10,360	12,496	12,057	12,063	9,119

Finances.—Table 13 gives a 10-year series of the finances of Canadian universities. Since 1954 they have received more than one half of their revenue from government grants and a very small amount from municipal councils. Beginning with the academic year 1951-52 and ending in 1966-67, the Federal Government provided university grants to help meet current operating costs. These grants were originally paid on the basis of 50 cents per head of population in each province and the eligible institutions received their share of the provincial allotment according to the number of full-time students in undergraduate and graduate courses. The rate of grant was increased to \$1.00 per capita in 1956-57, to \$1.50 in 1958-59 and to \$2.00 in 1962-63. In 1966-67 the grants, under a somewhat modified formula, were increased to about \$5.00 per capita. The Province of Quebec did not accept this grant for the years up to 1955-56. From 1956-57 to 1959-60 the payments refused by Quebec were held in trust by the Canadian Universities Foundation (now the Association of Universities and Colleges of Canada), which administers the fund. In 1960-61 the Quebec Government and the Federal Government negotiated

a new tax-sharing agreement under which Quebec provided its own grants and was reimbursed by an abatement of corporation tax. Commencing with 1967-68 the Federal Government discontinued paying grants directly to universities. Instead, the government agreed to transfer to the provinces financial resources (certain portions of federal revenues and required cash payments) equal to either \$15.00 per capita or 50 p.c. of the operating costs of the post-secondary education, whichever is the greater. The financial resources so transferred are disbursed by provincial governments at their discretion. (See also p. 345.)

The Federal Government also provides assistance to universities through the University Capital Grants Fund which is administered by the Canada Council. The original amount in the fund was \$50,000,000 (interest and profits to Mar. 31, 1968 increased it to over \$68,133,000), to be granted in amounts not exceeding 50 p.c. of specific building or capital equipment projects, having regard to the population of each province. Up to the end of March 1968, a total of over \$68,000,000 had been authorized. Grants are paid in four equal instalments spread over the period of construction so that there is a time lag between approval and payment. On Mar. 31, 1968, there remained a balance of unpaid grants totalling \$5,970,000 for construction projects still in progress. Any interest earned on that amount during 1968-69 would be distributed on Mar. 31, 1969. The Canada Council was also endowed with an additional \$50,000,000 (increased by \$10,000,000 Apr. 3, 1965), the interest on which is available for the provision of scholarships or other assistance in the fields of the arts, humanities and social sciences (see pp. 374-375).

13.—Current Income and Expenditure of Universities and Colleges, Academic Years Ended 1958-67

Academic Year Ended—	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees	Miscellaneous	Total	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1958.....	4,375	60,293	30,867	10,304	105,839	106,166
1959.....	4,668	74,294	33,546	11,373	123,881	124,664
1960.....	5,082	87,863	40,789	14,132	147,866	148,659
1961.....	5,332	115,524	45,991	14,396	181,243	181,311
1962.....	7,834	121,461	56,249	25,062	210,606	211,330
1963.....	8,191	142,606	62,397	27,107	240,301	244,015
1964.....	10,308	168,626	75,673	28,785	283,292	289,931
1965.....	7,986	200,412	89,738	44,632	342,768	346,222
1966.....	9,030	256,915	110,624	49,780	426,349	432,332
1967.....	9,506	384,521	129,953	57,604	581,584	579,215

Subsection 3.—Vocational Education

Table 14 summarizes the data on full-time vocational training classes. The duration of these classes may vary from three weeks taken annually by indentured apprentices at provincially operated trade schools, to three-year vocational high school courses or post-secondary courses offered in provincial institutes of technology. Numerous skills are taught, ranging from short courses in welding or typing to extended courses for instrument technicians or aircraft maintenance men. Students taking two-year or three-year vocational courses in public secondary schools may, upon completion, enter employment or may continue other formal training in a trade school or an institute of technology.

In addition to the full-time vocational courses, a great variety of part-time instruction is offered by both public and private institutions as an alternative to full-time training or as an attraction to the individual interested in a hobby.

14.—Full-Time Enrolment in Vocational Courses, School Year 1966-67

Course	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Vocational high school courses....	210	788	1,345	9,285	..	196,885
Post-secondary technical courses ¹ ..	541	—	350	441	12,472	10,287
Apprenticeship courses.....	1,035	131	1,116	317	..	5,194
Trade and other occupational courses ²	3,618	351	2,681	2,271	12,540	8,174
Training in co-operation with industry ²	18	—	—	318	9,917	7,587
Training of the unemployed ²	3,535	562	5,406	4,213	40,995	75,394
Training of the disabled ²	68	3	170	106	705	2,049
Training of technical and vocational teachers ².....	...	...	...	147 ³	..	16
Training for federal departments and agencies ²	94	—	598	—	—	57
Privately Sponsored—						
Trade school courses (1966-67)....	--	--	280 ⁴	109	..	2,843
Business school courses (1966-67)...	--	--	678 ⁴	658	..	4,257
Totals.....	9,119	1,835	12,624	17,865	76,629	312,723
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Publicly Sponsored—						
Vocational high school courses....	5,851	4,811	16,636	21,261	505	257,577
Post-secondary technical courses ¹ ..	868	640	3,388	2,050	—	31,017
Apprenticeship courses.....	1,070	1,723	5,168	4,473	—	20,227 ⁴
Trade and other occupational courses ²	1,950	4,026	6,217	8,818	228	50,874
Training in co-operation with industry ²	968	512	393	770	—	20,483
Training of the unemployed ²	8,133	4,760	3,823	2,988	210	150,019
Training of the disabled ²	1,008	195	27	251	—	4,582
Training of technical and vocational teachers ²	125	—	247	103	2	640
Training for federal departments and agencies ²	—	—	—	—	—	749
Privately Sponsored—						
Trade school courses (1966-67)....	586	293	1,135	896	..	6,142 ⁷
Business school courses (1966-67)...	1,124	1,259	1,303	2,305	..	11,584 ⁷
Totals.....	21,683	18,219	38,337	43,915	945	553,894

¹ Excludes 3,210 full-time students in one-year preparatory courses at institutes of technology. ² Enrolments of full-time students under the various programs of the federal-provincial agreements for the year ended Mar. 31, 1967. ³ Includes students from other Atlantic Provinces. ⁴ Includes one school in Newfoundland. ⁵ Includes one school in Newfoundland and one in Prince Edward Island. ⁶ An additional 7,658 registered apprentices took classroom training on a part-time basis and 55 took training by correspondence courses. ⁷ Nine provinces only; Quebec figures not available. In addition, there were 6,709 students in trade schools and 11,014 in business colleges taking part-time courses, 9,858 taking correspondence courses and 78 taking special courses.

Subsection 4.—Adult Education

Adult education benefits from a wide variety of sponsors, both public and private, but most important in this respect are government departments and agencies at all three levels. Although the Federal Government makes substantial contributions, provincial departments of education, of course, play the major role since education is a provincial responsibility. Total adult education enrolment reported in 1965-66 was 1,157,074. This may appear to be a large decrease from the 2,854,065 reported in 1964-65 but it is not an actual one. The survey taken in 1965-66 was limited and did not include either agricultural or vocational education, although these two together had reported an enrolment of almost 1,700,000 the year before. Nor did as many institutions report in the categories that were covered. Taking these two factors into consideration, plus the general increase that is known to have taken place from other evidence, it can be safely estimated that more than 3,000,000 adults were enrolled in some type of educational activity in 1965-66.

Almost 4,300,000 persons were reported as attending public lectures, film showings (exclusive of commercial theatres), and similar public events of an informative nature.

15.—Adult Education Activities, School Year 1965-66 with Totals for 1964-65

Province or Territory and Sponsor	Part-Time Enrolment in—			Total Enrolment	Attendance at Public Lectures, etc.
	Academic Subjects	Pro-fessional Training	Informal Courses		
	No.	No.	No.	No.	No.
Newfoundland—					
Universities.....	1,892	321	1,132	3,345	13,250
Government!.....	..	..	..	..	13,580
Prince Edward Island—					
Universities.....	587	—	—	587	—
Government!.....	220	—	632	852	1,250
Nova Scotia—					
Universities.....	4,155	5,335	5,907	15,397	31,586
Government!.....	7,526	..	3,125	10,651	24,873
New Brunswick—					
Universities.....	6,296	120	361	6,777	3,000
Government!.....	660	..	425	1,085	15,300
Quebec—					
Universities.....	43,534	28,608	18,335	90,477	182,540
Government!.....	46,728	..	52,890	99,618	—
Ontario—					
Universities.....	52,064	19,487	22,188	93,739	60,652
Government!.....	36,819	..	21,467	58,276	315,546
Manitoba—					
Universities.....	6,421	4,035	1,666	12,122	48,424
Government!.....	..	—	1,860	1,860	767,300
Saskatchewan—					
Universities.....	10,918	3,421	8,561	22,900	11,000
Government!.....	3,789	—	626	4,415	—
Alberta—					
Universities.....	8,743	14,307	24,025	47,075	40,700
Government!.....	11,874	—	5,348	17,222	55,613
British Columbia—					
Universities.....	10,975	7,365	7,134	25,474	200,870
Government!.....	14,782	—	60,033	74,815	234,000
Yukon Territory.....	—	—	191	191	—
Federal Government.....	16,830	..	3,819	20,649	629,776
Public libraries.....	—	—	3,108	3,108	292,289
Business colleges.....	—	23,135	—	23,135	—
Teacher-training institutions.....	—	49,195	—	49,195	—
Trade schools.....	—	38,202	—	38,202	—
Training in industry.....	—	127,865	—	127,865	—
Museums and art galleries.....	—	—	5,464	5,464	670,909
Wheat pools.....	—	—	—	—	—
Health departments and agencies.....	—	—	302,578	302,578	684,889
Totals, 1965-66¹	284,813	321,396	550,865	1,157,074	4,297,347
Totals, 1964-65²	309,198	1,870,030	674,927	2,854,065	7,286,367

¹ Operated and assisted by federal and provincial departments and agencies.

² Excludes duplicated enrolment.

PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

Section 1.—The Arts and Education*

Fine Art Schools, Galleries and Organizations

Fine art (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. Six universities offer a Bachelor of Fine Arts degree:—

Mount Allison University, Sackville, N.B.
 Sir George Williams University, Montreal, Que.
 University of Windsor, Windsor, Ont.
 University of Manitoba, Winnipeg, Man.
 University of Alberta, Edmonton, Alta.
 University of Victoria, Victoria, B.C.

Eleven universities offer a Bachelor of Arts degree with a major in fine art:—

Université de Moncton, Moncton, N.B.
 McGill University, Montreal, Que.
 Sir George Williams University, Montreal, Que.
 University of Guelph, Guelph, Ont.
 McMaster University, Hamilton, Ont.
 University of Toronto, Toronto, Ont.
 University of Western Ontario, London, Ont.
 University of Windsor, Windsor, Ont.
 University of Saskatchewan, Saskatoon and Regina, Sask.
 University of Calgary, Calgary, Alta.
 University of British Columbia, Vancouver, B.C.

There are many schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are:—

Nova Scotia College of Art, Halifax, N.S.
 École des Beaux-Arts, Quebec, Que.
 École des Beaux-Arts, Montreal, Que.
 Institut des Arts Appliqués, Montreal, Que.
 School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.
 Lakehead College of Arts, Science and Technology, Port Arthur, Ont.
 Ontario College of Art, Toronto, Ont.
 University of Manitoba School of Fine Arts, Winnipeg, Man.
 School of Art, Regina Campus, University of Saskatchewan, Regina, Sask.
 Alberta College of Art, Calgary, Alta.
 Banff School of Fine Arts, Banff, Alta.
 Vancouver School of Art, Vancouver, B.C.
 Kootenay School of Art, Nelson, B.C.
 University of Victoria, Victoria, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and concerts are features of the programs of the various galleries.

* Revised, except where otherwise noted, by the Extension Services of the National Gallery of Canada, Ottawa.

Many of these institutions supply their surrounding areas with travelling exhibitions and some range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of Ontario, the Art Gallery of Ontario and the new *Fédération des centres culturels du Québec* have been founded to carry out this sort of travelling program on a regional basis. On a smaller scale, art circuits are organized to serve certain areas such as those around St. John's, Nfld., Charlottetown, P.E.I., Trois-Rivières and Hull, Que., and Winnipeg, Man. The National Gallery of Canada conducts a nation-wide program of this nature and is the third largest circulating agency in North America. Several galleries maintain an art-rental service.

Among the principal public art galleries are:—

Fathers of Confederation Art Gallery and Museum, Charlottetown, P.E.I.
 Beaverbrook Art Gallery, Fredericton, N.B.
 The New Brunswick Museum, Saint John, N.B.
 Montreal Museum of Fine Arts, Montreal, Que.
 Musée d'Art Contemporain, Montreal, Que.
 Musée du Québec, Quebec, Que.
 Art Gallery of Hamilton, Hamilton, Ont.
 Art Gallery of Ontario, Toronto, Ont.
 Kitchener-Waterloo Art Gallery, Kitchener, Ont.
 National Gallery of Canada, Ottawa, Ont.
 Public Library and Art Museum, London, Ont.
 Sarnia Public Library and Art Gallery, Sarnia, Ont.
 Willistead Art Gallery, Windsor, Ont.
 Winnipeg Art Gallery, Winnipeg, Man.
 Mendel Art Gallery, Saskatoon, Sask.
 Moose Jaw Art Gallery and Museum, Moose Jaw, Sask.
 Edmonton Art Gallery, Edmonton, Alta.
 Art Gallery of Greater Victoria, Victoria, B.C.
 Vancouver Art Gallery, Vancouver, B.C.
 Art Gallery of Victoria, Victoria, B.C.

Other important collections of art are housed in arts councils and university galleries.

Among university galleries are:—

St. John's Memorial University Art Gallery, St. John's, Nfld.
 Dalhousie University Art Gallery, Halifax, N.S.
 Creative Art Centre of the University of New Brunswick, Fredericton, N.B.
 Owens Museum of Fine Arts, Mount Allison University, Sackville, N.B.
 Université de Moncton, Moncton, N.B.
 McGill University, Montreal, Que.
 Université Laval, Quebec, Que.
 Séminaire des Clercs de St-Viateur, Joliette, Que.
 Sir George Williams University Art Gallery, Montreal, Que.
 Agnes Etherington Art Centre, Queen's University, Kingston, Ont.
 Carleton University, Ottawa, Ont.
 Hart House, and Sigmund Samuel Canadiana Gallery of the University of Toronto, Toronto, Ont.
 McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.
 York University, Toronto, Ont.
 University of Manitoba, Winnipeg, Man.
 Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.
 University of Saskatchewan, Saskatoon, Sask.
 University of Alberta, Edmonton, Alta.
 University of Calgary, Calgary, Alta.
 Fine Arts Gallery of the University of British Columbia, Vancouver, B.C.

Five of the more important galleries connected with arts councils are the St. Catharines and District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford,

Ont., the Department of Fine Arts, McMaster University, Hamilton, Ont., the Brandon Allied Arts Centre, Brandon, Man., and the Art Gallery of the Calgary Allied Arts Centre, Calgary, Alta.

Among the leading fine art organizations of national scope, exclusive of museums and art galleries, are:—

- Association of Canadian Industrial Designers
- National Design Council
- Canadian Conference of the Arts
- Canadian Craftsmen's Association
- Canadian Society for Education through Art
- Canadian Group of Painters
- Canadian Guild of Potters
- Canadian Handicrafts Guild
- Canadian Museums Association
- Canadian Society of Graphic Art
- Canadian Society of Painter-Etchers and Engravers
- Canadian Society of Painters in Water Colour
- Canadian Society of Landscape Architects
- Federation of Canadian Woodcarvers
- Royal Canadian Academy of Arts
- Royal Architectural Institute of Canada
- Sculptors' Society of Canada
- Town Planning Institute of Canada
- Canadian Centre for Films on Art
- Community Planning Association of Canada.

The National Gallery of Canada.—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquess of Lorne, then Governor General, had recommended and assisted the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three laymen was appointed by the Government to administer grants to the National Gallery. Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament (RSC 1952, c. 186) and placed under the administration of a Board of Trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under this management, the Gallery increased its collections and developed into an art institution worthy of international recognition. Today, a Board of Trustees, reporting to the Secretary of State, administers all the National Museums of Canada, including the National Gallery. In 1960, the Gallery entered a new era in its history when the entire national collection and the staff and equipment necessary to its maintenance were transferred to new modern quarters—the Lorne Building in downtown Ottawa—which provides adequate well-lighted space for hanging the permanent collection and for displaying travelling exhibitions.

The Gallery's collections have been built up along international lines and give the people of Canada an indication of the origins from which their own tradition is developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented by the purchase of works from the Biennials of Canadian Art and other sources. The collections include many Old Masters, among which are twelve acquired from the famous Liechtenstein collection; extensive war collections; the Massey collection presented to the Gallery during 1946-50 by the Massey Foundation; a growing collection of contemporary art; prints and drawings; and diploma works of the Royal Canadian Academy. The prints and drawings collection consists of more than 5,000 items. The services of the

Gallery include the operation of a reference library open to the public which contains more than 10,000 volumes and periodicals on the history of art and other related subjects.

The National Conservation Research Laboratory, established in 1964, provides technical information on works of art from public and private collections across Canada and is responsible for the conservation of the national art collections. In addition, research is carried out on the effects of environment on works of art and on the durability of artists' materials.

An active program of exhibitions, lectures, films and guided tours is maintained for visitors to the Gallery in Ottawa. The interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and filmstrips prepared by the National Gallery staff. Promotion of and information on art films are handled by the Canadian Centre for Films on Art and their distribution by the Canadian Film Institute. The Gallery promotes interest in Canadian art abroad by participating in international exhibitions such as the Biennials of Venice, São Paulo and Paris, and by preparing major exhibitions of Canadian art for showing in other countries. At the same time, it brings important exhibitions from abroad for circulation in Canada.

Performing Arts Schools.—Music, the most widespread of the performing arts (which also include opera, drama, ballet and dance), is a degree course in a number of universities. The following offer degree courses:—

- Acadia University, Wolfville, N.S.—B.A. with music major, and Mus. B.
- University of Alberta, Edmonton, Alta.—B.A. major and Mus. B.
- Brandon College, Brandon, Man.—B. Mus. (Education)
- University of British Columbia, Vancouver, B.C.—B.A. major and B. Mus.
- University of Calgary, Calgary, Alta.—B. Mus.
- Université Laval, Quebec, Que.—B. Mus.
- University of Manitoba, Winnipeg, Man.—B.A. major and B. Mus.
- Université de Montréal, Montreal, Que.—B. Mus. and D. Mus.
- McGill University, Montreal, Que.—B. Mus.
- Université de Moncton (affiliated Collège Notre Dame d'Acadie), Moncton, N.B.—B. Mus.
- Mount Allison University, Sackville, N.B.—B.A. major
- Queen's University, Kingston, Ont.—B.A. major
- University of Toronto, Toronto, Ont.—B. Mus., M. Mus. and D. Mus.
- University of Western Ontario, London, Ont.—B.A. major
- St. Francis Xavier University (affiliated Collège Mount St. Bernard), Antigonish, N.S.—B.A. major
- Université Saint-Louis, Edmundston, N.B.—B. Mus.
- University of Saskatchewan, Saskatoon, Sask.—B.A. major and B.Ed. music
- Université de Sherbrooke (affiliated Collège du Sacré-Coeur), Sherbrooke, Que.—B.A. major
- University of Victoria, Victoria, B.C.—B. Mus.

Advanced instruction in music is also given at the Conservatoire de Musique et d'Art Dramatique in both Montreal and Quebec. Opera may be studied at the Royal Conservatory Opera School of the University of Toronto where advanced students work in close collaboration with the Canadian Opera Company and also at the Conservatoire de Musique et d'Art Dramatique and the Banff School of Fine Arts (summer) at Banff, Alta.

A Bachelor degree with specialization in drama may be obtained at Queen's University and the Universities of Alberta, Saskatchewan and British Columbia. Advanced instruction is also given during the summer at the Banff School of Fine Arts. The University of Toronto recently announced its first chair of drama, although it does not expect to offer degrees immediately. The University of British Columbia hopes to offer a post-graduate degree in theatre leading to the M.A. Some graduate courses are offered at the University of Saskatchewan and a degree course in drama is available at the University of Alberta. The National Theatre School of Canada offers complete practical training for talented students. It is bilingual, winter courses being held at Montreal, Que., and

summer courses at Stratford, Ont. Three years are required for the acting course and two for technical and production studies. The Manitoba Theatre School at Winnipeg is also of importance.

The National Ballet School at Toronto is the only residential ballet school in Canada. It offers academic studies together with practical instruction. Professional instruction is also offered by two other major Canadian ballet companies, Les Grands Ballets Canadiens, Montreal, and the Royal Winnipeg Ballet, Winnipeg. The Canadian School of Ballet is located in Kelowna, B.C., and advanced ballet training is given during the summer at the Banff School of Fine Arts.

Museums

The museums of Canada, as elsewhere, range from small, locally gathered, historical artifacts and objects to large government-operated institutions which collect, classify and display such objects as may be necessary to study and disseminate knowledge of natural history, human history, science and technology, with special but not exclusive reference to Canada. Many of these larger museums, especially the National Museum of Canada and the Royal Ontario Museum, have a long, distinguished heritage in research and publication of scholarly works and serve an important role as educational and cultural centres. In this area they have an advantage over other agencies of education in that they are able to provide, for study and exhibition, actual, original objects as well as descriptions and pictures of such objects. They offer many educational services to the public through exhibits, guided tours, lectures and scientific and popular publications. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services:—

Nova Scotia Museum, Halifax, N.S.
 McGill University Museums, Montreal, Que.
 National Museum of Canada, Ottawa, Ont.
 Royal Ontario Museum, Toronto, Ont.
 Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are:—

The New Brunswick Museum, Saint John, N.B.
 Museum of the Province of Quebec, Quebec, Que.
 The Manitoba Museum, Winnipeg, Man.
 Provincial Museum of Natural History and Anthropology, Victoria, B.C.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, the lending of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. A number of museums have special programs for children not directly associated with school work including Saturday lectures and film showings, activity groups, nature clubs and field excursions. At the higher educational level, museum field parties provide research training to university students in many disciplines and museum staffs act as professional consultants, answer a host of enquiries on scientific and technical subjects, and serve as consultants or advisers to foreign scholars and institutions.

For adult laymen, museums offer lectures, film showings and guided tours, the latter usually available throughout the year. Staff members may be sent to give lectures to service clubs, church groups, parent-teacher associations and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. At least seven Canadian museums have conducted regular

radio or television programs and others have made occasional contributions. Some historical museums stage annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

The National Museums of Canada.—The National Museums originated in the Geological Survey of Canada and their early history is inseparable from that institution. The first united Parliament of Upper and Lower Canada met in Montreal in 1841. In July of that year, the Natural History Society of Montreal and the Literary and Historical Society of Quebec petitioned the government to carry out a geological survey. As a result, a resolution was passed in the Estimates of Sept. 10 to defray the expenses of a geological survey of the Province of Canada.

William E. Logan was appointed the first director of the Geological Survey in 1842. He and his assistant, Alexander Murray, undertook their first field work in 1843, and their collections formed the humble beginnings of the National Museums. Logan was much more than a geologist and his interests extended to other branches of natural science. His diaries contain accurate drawings of named plants. He wrote in his annual report for the year 1852-53: "It may be a consideration whether a growing country like Canada could not afford to anticipate what future importance may require in the nature of a national museum and at some future time not far distant, erect an appropriate edifice especially planned for the purpose".

In the meantime, the officers of the Geological Survey continued to collect for the geological museum. In 1856 Elkanah Billings, a palaeontologist and the first of a number of specialists, was added to the staff. Legislation passed that same year to continue the work of the Geological Survey specified the establishment of a geological museum open to the public to exhibit specimens, books and instruments.

In 1874 the practice of recording the number of visitors to the museum was started; from May 1874 to April 1875 the number of visitors was 1,017 and by April 1896 it had reached 31,595 annually. In 1874 the distribution of specimens of minerals, rocks and other natural history objects to schools was started with a donation to the Board of School Teachers of Elora, Ont. The first organized museum lecture program was undertaken in 1912 with a series of lectures for young people after school. By 1915, Saturday morning lectures for children and evening lectures for adults—both features of the museum program today—were in operation. Prior to 1880 the museum occupied several buildings in Montreal, but that year the Geological Survey moved to Ottawa and moved into the former Clarendon Hotel on Sussex Street. Construction of the Victoria Memorial Museum building was started in 1904 and six years later the Geological Survey moved in.

The scope of the museum was enlarged in the Act of Apr. 28, 1877 "to make better provision respecting the Geological and Natural History Survey of Canada and for maintenance of the museum in connection therewith". In that Act the survey was instructed "to study and report upon the flora and fauna of the Dominion" and "to continue to collect the necessary material for a Canadian museum of natural history, mineralogy and geology". As early as the Act of 1856 the Geological Survey of Canada had been authorized to "from time to time" distribute publications relative to the survey. From this authority developed the museum's series of scientific bulletins presenting the researches of its staff.

The Act of 1877 established the Geological Survey and the museum on a continuing basis and permitted the appointment of specialists in natural history. John Macoun was appointed to establish the division of biology in 1882. He was an eminent botanist who had accompanied the expedition of Sanford Fleming to explore Western Canada in 1871. Macoun's report of 1874 laid the groundwork for the establishment of western Canadian agriculture. He also published a catalogue of Canadian birds. In 1895 under the third director of the Geological Survey, George M. Dawson, the museum entered the field of Canadian anthropology.

In 1910 the museum began an expanded program of research and exhibition under the direction of R. W. Brock, then director of the Geological Survey of Canada. Un-

fortunately this program was curtailed during the first World War because the burning of the Parliament Buildings in 1916 forced Parliament to occupy the museum building until 1919. Later, expansion of the exhibition halls was handicapped by the museum sharing its building with the National Gallery of Canada and the Geological Survey of Canada. In 1927 the Governor General in Council gave authority "to designate the museum branch of the Department of Mines as the National Museum of Canada". In 1956 the museum was divided into two branches, the Museum of Natural History and the Museum of Human History. Ten years later, a third branch was formed, the Museum of Science and Technology. On Apr. 1, 1968, the National Museums Act was proclaimed by Parliament which brought the three branches of the National Museum of Canada and the National Gallery of Canada under the National Museums Corporation.

The Act specified a 14-member board of trustees with over-all responsibility for policy and operations of the National Museums of Canada. The Board includes a chairman and vice-chairman, each appointed for a five-year period. The other members are appointed for terms ranging from two to four years each. The new Act also created the position of secretary-general with responsibility for the financial and administrative arrangements of the museums. The names for the three museums were changed—the Natural History Branch became the National Museum of Natural Sciences; the Human History Branch, the National Museum of Man; and the Science and Technology Branch, the National Museum of Science and Technology. The name of the National Gallery of Canada remained unchanged.

Within the next few years it is envisioned that a new National Museums of Canada complex will take shape in Ottawa. In 1968, a director of the building planning was appointed to begin this work. The responsibilities of a great museum include collecting, preserving and storing objects related to the various disciplines within its area of activities. Of equal importance is the research carried out by specialists in these fields and the publication of their findings. Museums exhibit artifacts from their collections in attractively designed displays to illustrate the scientific origins of the various subjects. This however, is only part of a museum's extensive education program, which extends to lectures, publications, enquiries, consultations, workshops, guided tours for children and adults alike, travelling exhibits, loans, library services and radio and television programs. The National Museums of Canada present all these facets for the enjoyment and education of the people of Canada.

The National Museum of Natural Sciences contains the divisions of botany, zoology, geology and palaeontology; the National Museum of Man contains the divisions of archaeology, ethnology, folklore and history, together with the Canadian War Museum; the National Museum of Science and Technology includes the physical sciences and all branches of technology and incorporates the previously existing National Aviation Museum; the responsibilities of the National Gallery are outlined on pp. 364-365. Services common to the four institutions are concerned with exhibition and educational, technical, administrative and financial functions. The 1967-68 staff totalled 312, including five executive, 77 scientific and professional, 23 administrative, 73 administrative support, 83 general technical and 51 operational employees.

During 1967 (latest available figures) the National Museum of Natural Sciences and the National Museum of Man together recorded 332,379 visitors; the National Museum of Science and Technology, 168,217; the National Gallery, 476,026; the Canadian War Museum, 404,953; and the National Aeronautical Collection, 205,748. In all, some 1,500,000 persons visited the four museums.

The National Museum of Natural Sciences.—The 1968 field research program in natural history included a number of expeditions to various parts of Canada and adjacent areas. The work involved investigations of birds in Saskatchewan; ethological (animal behaviour) and zoological (animal) studies of Bathurst Island in the Canadian Arctic in conjunction with the Polar Continental Shelf Projects; a short survey of sand-burrowing

crustaceans (hard-shelled animals) of eastern Florida, studies were continued on the freshwater molluscs of Hudson Bay drainage basin, the region of Chibougamau, Que., and in Austria, Yugoslavia and Northern Italy. In addition, 28 projects on the taxonomy, distribution and ecology of various invertebrate (spineless) animal groups were conducted by Canadian university biologists and students, as well as other biologists, under contract with the Museum. There were investigations of the North American eel; a survey to determine the effects of the tree line on northern fish; a study of biology of crustaceans of lakes in Manitoba; and collection of plants in alpine parts of the Yukon.

Museum staff participated in oceanographic cruises conducted by the Fisheries Research Board of Canada and the Bedford Institute of Oceanography in the eastern Pacific and western Atlantic regions and in co-operative marine biological studies of New England, Chesapeake Bay, eastern Florida and the Caribbean Sea. The new Canadian Oceanographic Identification Centre has sorted and identified zooplankton (marine animals) for other biology laboratories from collections taken along the Atlantic Coast of Canada and from several regions along the Pacific.

Botanical field work included a variety of projects from the Cape Breton highlands to the mountains of Queen Charlotte Islands and the Western Canadian Arctic. There were collections made in three national parks in Nova Scotia and New Brunswick, in British Columbia and in Washington State. Marine algae were also taken along the St. Lawrence River from Kingston to Rivière du Loup and in Prince Edward Island; on Cornwallis Island, N.W.T., and a series of islands in the western Canadian Arctic (Prince Patrick, Banks, Eglinton, Melville and Brock).

Mineralogical operations involved a three-day field trip to northern New York State where augen gneiss (a metamorphic rock) specimens were collected. There was also a week-long project at Bancroft, Ont., for the collection of augite (a rock-forming mineral) and nepheline (a source of silica used for glass making). A new fluorescent mineral display, the largest on the North American Continent, was added to the mineral hall installed in the east wing of the Victoria Memorial building on the main floor.

The education program continued with lectures for adults, Saturday morning programs for children, the junior nature club, the school loan program, children's classes, guided tours, and the national collection of nature photographs.

The National Museum of Man.—Increased activity in field work, research and exhibition was apparent in the Museum of Man's 1967-68 program. This increased activity included not only staff scientists, but contract work involving university personnel and other scholars and scientists in the various fields under the scope of the Museum's jurisdiction. Research, laboratory and office studies were conducted in archaeology, ethnohistory, ethnology, folklore, history, linguistics and physical anthropology.

In 1967 a total of 72 contracts with a value of more than \$300,000 involving many types of research was issued by the Museum. This included research into folk music of several origins, planning of exhibits for the public, the study of native peoples and their language, archaeological investigations from coast to coast and into the Far North, as well as in Alaska. The 1967-68 exhibition program included the opening of two Indian halls—the West Coast Indians and the Indians of the Eastern Subarctic Region. Artifacts from the Museum were lent to other museums and institutions in many parts of the world, including the Hemisfair (Dallas, Texas) and the world Olympics site in Mexico City. Scientists of the Museum also installed exhibits at Man and His World in Montreal, and undertook the planning of exhibits in the Canadian Pavilion at Osaka '70 in Japan.

Staff scientists combined field work with attendance at conferences in various countries. In Canada they were guest lecturers in many centres and served as consultants and advisers to foreign institutions and scientists. They produced both popular and professional articles on their work with the Museum in addition to research papers for professional meetings and seminars.

The Canadian War Museum, which is part of the National Museum of Man, had its beginning in a military museum which was established in Ottawa in 1880, although that museum was closed in 1896 and remained inactive until after the First World War when a committee was formed to find a proper place for Canada's military artifacts. The War Museum Board was established in 1938 and four years later the Canadian War Museum was opened to the public near the centre of the city. In 1967 the Museum greatly expanded its space when it took over a large stone building formerly occupied by the Public Archives. With three floors of exhibition area, it is now able for the first time to show articles of war that have been gathered and kept in storage for decades.

The Museum collects and displays artifacts of Canada's military past on the land, the sea and in the air. Most of the material is Canadian but some is from other countries whose military history has been linked at some time with Canada. Many of the artifacts are gifts from individuals. The oldest article in the Museum is a Viking sword which may date from the last half of the 10th century; the most recent acquisitions relate to the Canadians with the United Nations peace-keeping forces in the Mediterranean area.

Section 2.—The Educational Functions of the Canadian Broadcasting Corporation and the National Film Board

Educational Functions of the Canadian Broadcasting Corporation.—The educational activities of the CBC take several different forms: radio and television broadcasts intended for use within primary and secondary schools; formal instruction courses for adult listeners and viewers; informal educational programming for children and adults; and the production from program material of a variety of publications, recordings and audiotapes.

School Broadcasts.—The CBC has been engaged in school programming on radio since the 1940s and on television since the 1950s. Programs are produced for national, provincial and local broadcast and, in some cases in the western provinces, for regional broadcast. Programs at the national level—Canadian School Broadcasts and Canadian School Telecasts, as they are titled—are designed to enrich rather than directly instruct and are based on elements common to all provincial curricula. They are planned in co-operation with the Canadian Commission on School Broadcasting, which represents the provincial departments of education and the teaching profession, and is composed of ten directors and two working councils, one for French-language and one for English-language programs. The CBC pays the entire cost of national school programs. At the provincial level, programs follow provincial school curricula closely and are planned in collaboration with the various provincial departments of education. They are financed on a cost-sharing basis.

In 1967-68, CBC television carried some 2,500 school programs—national, regional, provincial and local. School radio programs—national, regional and provincial—totalled more than 1,500. National programs on the English networks included series on Canadian writing, history, geography and transportation; current affairs; the physical sciences; careers; the everyday use of French; human communications; and the background and values of English literature. Subjects dealt with on the French networks included geography, forestry, biology, the history of civilizations, the plastic arts, drafting, physical education and art appreciation.

Adult Instruction Programs.—In conjunction with university authorities, the CBC French networks presented series on a range of subjects including Greek and Roman civilization, English literature, economics, economic geography, mathematics, religious sciences, scientific psychology and French literature. At the postgraduate level, a refresher course was presented for medical practitioners. The CBC Research Department conducted a special study of the response of Quebec physicians to this series.

In the field of language instruction, in which a variety of programs have been offered over the years, the CBC's French radio stations in Vancouver and Toronto carried a series of French lessons. CBC Research reviewed and updated their study of an earlier television course of English lessons for non-English-speaking immigrants.

Youth Programming.—CBC radio and television continued to offer special programs of entertainment and information for age groups from pre-school to teens. French programming for young children included stories and fantasy, musical training, kindergarten projects, comedy, adventure series and film cartoons. For teenagers there were science and natural history programs, popular music, youth clubs and activities, and magazine programs reflecting the role of youth in contemporary society. English network programming for children included French for pre-schoolers, songs, stories and puppets, Canadian-produced adventure films and cartoons, and public school quiz competitions. Programs for teens included popular music and variety, student quiz programs, debates and discussions, drama classics, magazine programs reflecting the youthful viewpoint on issues of the day, and special documentaries on the problems and achievements of young Canadians. During the year, special audience research studies were conducted on certain aspects of both French and English youth programming.

Informal Adult Education.—Much of the CBC's general programming is educational in a broad sense—Canadian and international news coverage, live broadcasts of special events and public occasions, and programs of comment, interview, discussion and documentary on public affairs. In addition, certain programs offer informational and educational material in specific fields.

English-language radio programs in 1967-68 included such examples as the 1967 Massey Lectures, *Conscience for Change*, given by Martin Luther King; *Ideas*, offering talks and discussion series on subjects in the arts, the social sciences and philosophy; the *Arts and Science Journal*; the literary series *Anthology*; farm and fisheries broadcasts; *Agenda*, reporting on the activities of professional and other associations; *Indian Magazine*, reflecting the interests and concerns of Canadian Indians; *CBC Metronome*, on music events across the country; *Concern*, in the field of religion and social change; and special broadcasts from public conferences, university forums and teach-ins including the annual *Couchiching Conference*, co-sponsored by the Canadian Institute on Public Affairs and the CBC. *Cross-Country Check-Up*, a national open-line telephone program, directly involved its listeners in discussion of public issues.

On English-language television, special interest programs included the regular *Country Calendar* and *This Land of Ours*, dealing with rural life and natural resources. On a regional basis, special series were again produced on farm technology and management under the title *This Business of Farming*. *Man Alive* reflected changing concepts of religion in modern life. *Extension* presented a 13-week series on modern Canadian poetry. Among the specialized productions of the CBC's arts and sciences section were the Centennial series on *Canadian Wildlife*, and the series *Man at the Center* and *Science and Conscience*, examining a number of scientific subjects in their social and cultural contexts. Teach-ins and forums were televised on a variety of public issues. In the political field, 1967-68 was notable for the very large audiences and interested response to live television coverage of two constitutional conferences, two Canadian party leadership conventions, the first national TV debate among party leaders (a CBC-CTV co-production), and the federal election.

French-language radio offered special interest programs in such fields as literature, science, language, women's interests, music appreciation, labour, and rural life and farming; *Des livres et des hommes*, *Gala de la poésie*, *la Cybernétique et nous*, *la Parole est d'or*, *Fémina*, *Faisons de la musique*, *Capital et travail*, *le Réveil rural*. The open-line telephone format was used very successfully in *Place publique*, dealing with political affairs, and in *le Père Legault*, in the field of religion.

On French-language television, special interest programs included *Langue vivante*, on French usage; *Femme d'aujourd'hui*, reflecting the varied concerns of modern women; regular farm programs such as *les Travaux et les jours* and *les Quatre saisons*, and the special series *Agriculteurs de demain* on technological advances in farming. In the field of arts and letters, there were such programs as *Conférence* and *Visa pour l'avenir*. Music appreciation series included *Initiation musicale*. *Dossiers* presented documentaries on such subjects as news gathering and water pollution. The public forum or talk-in format was used effectively to explore public issues in some editions of *le Sel de la semaine*.

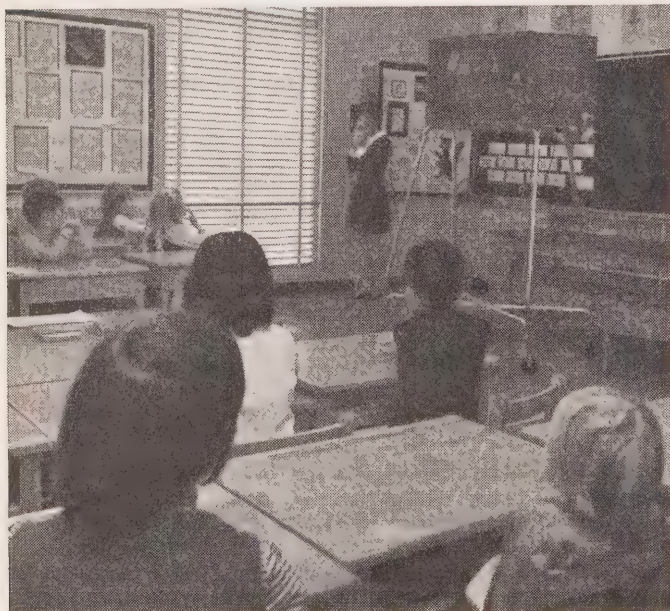
The CBC Northern Service continued and extended its experiment in broadcasting discussions among Indians and Eskimos in their own languages, in co-operation with the Indian-Eskimo Association.

Publications and Audio-Visual Material.—The texts of selected English-language programs—such as radio lecture series and social or scientific television documentaries—are published and sold by the CBC Publications Branch. Some CBC recordings are also produced for public sale, from broadcast material such as the special Centennial programs on Canadian history.

In 1967, CBC Publications extended its operations to include the CBC Learning Systems project—a library of tape recordings from CBC broadcasts, available at nominal charge to educational institutions. The first selection of tapes included various Massey Lectures and material from the *Ideas* series. Depending on response to the project, the range of material may be broadened in the future.

Various Canadian music recordings of the CBC International Service have been made available to the public by arrangement with commercial recording companies. Notable among them is the 17-disc album *Music and Musicians of Canada*.

Contractual and other considerations have limited the availability of CBC educational films for non-broadcast use. During 1968, the possibility of wider distribution was under active study.



Information Retrieval Television is under experiment in several schools, giving teachers on-demand access to audio-visual aids from a remote library. This system is designed to overcome the inflexibility of scheduled broadcasting which places control of programming in the hands of the broadcaster rather than the teacher.

Also in 1968, plans were announced for a joint project of the Ottawa school system, the Ontario Institute for Studies in Education, and Bell Canada, to test an information retrieval system for educational television. Programs would be transmitted to individual classroom screens on request, by coaxial cable from a central audio-visual library. The two-year experiment was expected to start in 1969, and CBC was to be among the contributors to the stock of visual material.

Future Structure of ETV in Canada.—Following government proposals for special legislation on educational broadcasting, the CBC was among those who submitted briefs on the subject to the Parliamentary Committee on Broadcasting in 1968.

Educational Functions of the National Film Board.—The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board produces and distributes filmstrips and still photographs on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest". Films are produced primarily in the English and French languages and, whenever possible, foreign-language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16mm. community film program is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. There are more than 700 national, provincial and community film distribution outlets from which thousands of 16mm. prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

A large part of the 16mm. community film audience is reached through classroom showings, indicating progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend is the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

Original films are shown regularly over English-language and French-language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16mm. print circulation is carried on through posts of the Departments of External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, Paris in France, New York, Detroit, Chicago and San Francisco in the United States, New Delhi in India, Tokyo in Japan and Buenos Aires in Argentina, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with those of Canada, aiding international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

Section 3.—The Canada Council

The Canada Council was created in 1957 by the Government of Canada, to "foster and promote the study and enjoyment of, and the production of works in, the arts, humanities and social sciences". It carries out its task mainly through a broad program of fellowships and grants of various types. It also shares the responsibility for Canada's cultural relations with other countries, and administers, as a separate agency, the Canadian National Commission for UNESCO.

The Council itself is an independent agency which reports annually to Parliament, through a member of the Cabinet, but sets its own policies and makes its own decisions within the terms of the Canada Council Act. It is made up of 21 members appointed by the Governor in Council. The Chairman and Vice-Chairman serve for terms not exceeding five years, and other members for terms of three years. The Council usually meets at least five times a year. The day-to-day administrative work is carried out by a permanent staff in Ottawa, headed by a director and an associate director who are appointed by the Governor in Council.

Income.—The Council's income is derived from three sources. The most important source of income is the annual grant of the Government, which amounted to \$20,580,000 for the year ended Mar. 31, 1969. This is the second year an annual grant has been made, but the policy was foreshadowed by an unconditional government grant of \$10,000,000 made in April 1965. Another source of operating income is the Endowment Fund, of which only the interest may be used and which is expected to yield about \$4,200,000 in 1968-69. The original value of the Endowment Fund, established by Parliament when it created the Canada Council, was \$50,000,000. The Canada Council also receives special funds from private donors, the most noteworthy of which to date was from the estate of the late Dorothy J. Killam, and is expected to amount to \$16,000,000. The funds from private donations are used in accordance with the wishes of the donors.

Assistance to the Arts, Social Sciences and Humanities.—Professional artists, doctoral candidates and members of staff of Canadian universities account for a large share of the Council's assistance. Much of this aid is channeled through the annual competitions, for awards and bursaries in the arts and, in the social sciences and humanities, for doctoral, post-doctoral and leave fellowships. The Council offers other forms of assistance to individual artists and gives extensive aid to arts organizations. Free research in the social sciences and humanities is backed by a rapidly growing program of research grants, and the Council also supports learned publications, meetings and exchanges and research library collections.

In the year 1967-68, the Council devoted approximately \$11,324,000 to the humanities and social sciences, of which \$7,513,000 financed 1,700 fellowships at the doctoral and post-doctoral levels, and \$3,811,000 was applied to grants in aid of research, university libraries, meetings of scholars and artists, visiting lecturers, publication of scholarly works and other forms of assistance. In the arts, the Council spent \$7,125,000, of which \$917,000 was used to finance 235 bursaries and awards, and \$6,208,000 was applied to grants, including about \$1,519,000 for music, \$435,000 for festivals, \$1,707,000 for the theatre, \$1,237,000 for dance and opera, \$1,022,000 for the visual arts and \$288,000 for publications.

Special Programs.—Apart from its own program, the Canada Council administers on behalf of the Canadian Government two programs of cultural exchanges with European countries. Under one of these programs, fellowships and grants totalling \$568,000 were awarded in 1967-68 to scholars and artists from France, Belgium and Switzerland; in

1968-69 the program will be extended to include the Federal Republic of Germany, Italy and the Netherlands. Under the other program of cultural exchanges, the Council administers the funds of the Canadian Cultural Institute in Rome, created in 1967 by an agreement between Canada and Italy. The Institute offers awards totalling \$25,000 a year to Canadian artists and scholars who desire to work or study in Italy.

The Killam Awards of the Canada Council, another of its special programs, were inaugurated in 1967 with funds from the Killam Estate. These awards go to support a few scholars of exceptional ability engaged in research projects of far-reaching significance. Research projects under this program can be in the social sciences and humanities, or interdisciplinary, linking these with any of the physical or biological sciences.

Prizes and Special Awards.—Under its power to “make awards to persons in Canada for outstanding accomplishments in the arts, humanities or social sciences”, the Council awards annually its own Canada Council Medal and the Molson Prize which is financed by funds from the Molson Foundation. It also finances the annual Governor General’s Literary Prizes.

UNESCO.—The Canada Council Act provides for certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. It has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the National Commission co-ordinates UNESCO program activities abroad, and administers a small program in furtherance of UNESCO objectives. In the year ended Mar. 31, 1968, the Council spent approximately \$198,000 through the National Commission for these purposes.

Section 4.—Library and Archive Services

Library Services

The National Library.—The National Library of Canada came into existence formally on Jan. 1, 1953 by the proclamation of the National Library Act (RSC 1952, c. 330). On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Act established a National Library Advisory Council consisting of the National Librarian who serves as Chairman, the Parliamentary Librarian and 12 appointed members, at least one of whom must be from each of the ten provinces.

The Library was housed for a long period in inadequate temporary quarters that limited its collections and activities. Construction of a permanent building, designed to accommodate both the National Library and the Public Archives, began in 1963 and was completed in the spring of 1967. The new structure, which has a floor area of 13 acres and was equipped initially with 81 miles of steel shelving, was opened formally by the Prime Minister on June 20. The book collection now consists of 400,000 volumes, supplemented by microcopies of more than 100,000 additional titles. Newspaper files formerly in several locations have been brought together and now form the largest collection in Canada.

The Library compiles and publishes *Canadiana*, a monthly catalogue of new books and pamphlets relating to Canada; 12,000 to 13,000 titles are listed each year.* *Canadiana* includes details of trade publications, official publications of the Government of Canada and the ten provinces, and of films and filmstrips produced in Canada.

The *National Union Catalogue* lists over 9,000,000 volumes in about 295 government, university, public and special libraries in all provinces. New accessions (which numbered over 893,000 in 1967-68) are reported regularly, and the Union Catalogue thus forms a continuously up-to-date key to the main book resources of the country. During the

* A list of 400 selected titles of “Books About Canada”, prepared by the National Library, appears in Chapter XXVII of this volume.

year ended Mar. 31, 1968, the Reference Division was asked to locate more than 60,000 titles, and it is noteworthy that copies of 80 p.c. of them were found in Canadian libraries.

The Library has published a union list of serials in the fields of the humanities and social sciences currently received by Canadian libraries. This list is a first step toward a complete union list of such serials in the humanities and social sciences that will complement the *Union List of Scientific Serials in Canadian Libraries* published by the National Science Library. The Library is also preparing for early publication a retrospective *Bibliography of Canadiana, 1867-1900*, which will list more than 25,000 titles.

The National Science Library.—The National Science Library has two closely related roles—it serves the staff of the National Research Council engaged in pure and applied research, and it serves the entire scientific and industrial community of Canada by supplementing local and regional resources and services.

Plans for developing a central scientific library were proposed as early as 1924 by the Honorary Advisory Council for Scientific and Industrial Research, established in 1916 and now known as the National Research Council (see pp. 388-397). The Library grew slowly until 1928 when the Council's first research laboratories were set up. Since then it has been developed to parallel the growth and expansion of the laboratories and the national interests and activities of the Council with the result that in 1953, under an agreement with the more recently established National Library, the National Research Council Library formally assumed responsibility for national library services in the fields of science and technology. This responsibility was confirmed by Act of Parliament in 1966 (SC 1966-67, c. 26). In 1967, the President of the Association of Canadian Medical Colleges recommended to the Government that responsibility for national services in the medical and health sciences be assigned to the National Science Library. This recommendation endorsed the proposals of a study group made up of the deans of medical schools, medical librarians and representatives from the Medical Research Council and other appropriate government agencies.

The Library's collection, which is doubling in size every ten years, comprised approximately 725,400 volumes by the end of the year 1967-68. The bulk of this material, including journals and other serials, books, pamphlets, and technical and research reports (many in microform), is housed in the main Library with smaller and more specialized collections in eight branch libraries.

The resources of the Library are made available by means of an extensive inter-library loan and photocopying service. For purposes of current awareness, the Library issues twice a month its *Recent Additions to the Library*, and a list of *Serial Publications in the Library* is also issued at frequent intervals through the use of data processing equipment. Reference and research services include answering requests for scientific information, literature searches and the compilation of abstracts and bibliographies, and the identification and location of obscure publications.

The Canadian Index of Scientific Translations, a card index to the location of completed English translations in Canada and other countries, is maintained by the Library. Translations of scientific articles prepared by the Library's Translations Section are listed and made available in Canada and abroad. A complete English translation of the Russian journal *Problemy Severa* (*Problems of the North*) is also prepared by this Section.

The National Science Library is responsible for the publication of the *Union List of Scientific Serials in Canadian Libraries* and the *Directory of Canadian Scientific and Technical Periodicals*.

Public Libraries.—Provincial governments have jurisdiction over public libraries but these are generally administered and regulated by municipal authorities; exceptions are Newfoundland and Prince Edward Island where the provincial governments maintain the public library service throughout the province. Municipal libraries serve the urban population and provincial and regional libraries serve the more widely scattered population. Summary results of the annual public library survey for 1966 are given in Table 1,

with comparable totals for 1965. Circulation of books was 4.0 per capita in both years and current operating payments were \$1.74 in 1966 and \$1.54 in 1965. The full-time staff numbered 3,538 in 1966, of whom 793 or 22.4 p.c. were professional librarians.

1.—Summary Statistics for All Public Libraries, 1966 with Totals for 1965

Province or Territory	Population Served	Libraries	Stocks of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full-Time Staff
	No.	No.	No.	No.	\$	No.
Newfoundland.....	493,396	4	442,966	1,036,893	518,121	49
Prince Edward Island.....	108,535	1	116,061	164,120	79,591	7
Nova Scotia.....	511,337	13	531,436	3,053,825	1,073,154	96
New Brunswick.....	229,402	7	250,603	1,431,273	335,526	53
Quebec.....	3,623,334	262	3,431,031	6,933,245	3,819,964	449
Ontario.....	6,868,710	291	9,736,880	43,650,783	18,970,927	1,776
Manitoba.....	618,347	23	737,370	3,555,660	1,431,916	171
Saskatchewan.....	468,683	55	871,611	2,953,451	1,590,392	177
Alberta.....	1,088,204	151	1,917,017	6,616,705	2,689,511	291
British Columbia.....	1,567,744	82	2,489,491	11,427,744	4,280,607	465
Yukon Territory.....	14,382	1	48,515	..	69,125	4
Totals, 1966.....	15,592,074	890	20,572,981	80,823,699	34,858,834	3,538
Totals, 1965.....	14,102,520	910	20,192,135	78,288,557	30,023,404	3,464

University, College and School Libraries.—Libraries in 76 universities and colleges having enrolments of 100 or more students reported more than 12,000,000 volumes in 1965-66. The number of volumes per student increased from 57.6 in 1964-65 to 59.3 in 1965-66 and expenditures per student increased from \$98.89 to \$126.85. The total staff in 1965-66 numbered 3,164, of whom 840 or 26.5 p.c. were professionals.

2.—Libraries in Universities and Colleges, by Province, Academic Year 1965-66 with Totals for 1964-65

Province	Libraries	Volumes	Enrolment Served	Expenditures per Full-Time Student ¹
	No.	No.	No.	\$
Newfoundland.....	1	137,579	3,641	64.26
Prince Edward Island.....	1	29,000	685	68.61
Nova Scotia.....	9	748,938	10,191	108.78
New Brunswick.....	4	403,515	7,827	79.68
Quebec.....	14	2,815,391	49,608	109.89
Ontario.....	27	5,162,495	67,782	146.24
Manitoba.....	8	678,956	12,540	82.04
Saskatchewan.....	3	428,458	13,162	84.80
Alberta.....	3	621,069	14,225	142.47
British Columbia.....	6	1,105,201	24,669	177.21
Totals, 1965-66.....	76	12,126,602	204,330	126.85
Totals, 1964-65.....	79	11,103,527	192,614	98.89

¹ Full-time and equivalent.

In 1965-66 only 39.8 p.c. of the reporting 5,414 elementary and secondary schools had centralized libraries. Their total bookstock was 9,998,900 or 5.2 books per pupil served, approximately the same as in the previous year. Payments for books and other library materials ranged from \$1.06 per pupil served in Newfoundland to \$5.88 in Saskatchewan, the average for Canada being \$3.46.

3.—Centralized School Libraries, by Province, School Year 1965-66 with Totals for 1964-65

Province	Libraries	Books	Enrolment Served	Payment for Books per Pupil
	No.	No.	No.	\$
Newfoundland.....	9	14,107	4,701	1.06
Prince Edward Island.....	7	11,982	3,759	1.39
Nova Scotia.....	66	150,804	37,706	1.06
New Brunswick.....	54	146,923	32,369	2.18
Quebec.....	..	3,074,214	656,912	1.77
Ontario.....	1,006	3,133,421	661,494	4.68
Manitoba.....	100	394,576	68,047	2.66
Saskatchewan.....	75	253,086	32,394	5.88
Alberta.....	382	987,757	154,030	3.64
British Columbia.....	455	1,832,030	269,546	4.90
Totals, 1965-66.....	2,154	9,998,900	1,920,953	3.46
Totals, 1964-65.....	2,595	7,585,163	1,493,932	2.86

Libraries in 65 technical institutes and trade schools serving a full-time enrolment of 57,312 students reported a total bookstock of 254,728 volumes in 1965-66; library expenditure was calculated at \$8.39 per full-time student. Also, 11 teachers' colleges (one in Nova Scotia and 10 in Ontario) reported full-time enrolment of 5,727 and total bookstock of 138,696 volumes.

The Public Archives

Provision for the creation of the Public Archives was first made by an Order in Council of June 20, 1872, which appointed an officer of the Department of Agriculture to take charge of historical archives. In 1903, the responsibility for old government records was transferred from the Secretary of State to the Department of Agriculture, and the head of the Archives was given the title of Dominion Archivist and Keeper of the Records. In 1913, the Archives became the Department of Public Archives (SC, 1911-12, c. 4, now RSC, 1952, c. 222). The purpose of the Public Archives is to assemble and make available to the public a comprehensive collection of source material relating to the history of Canada.

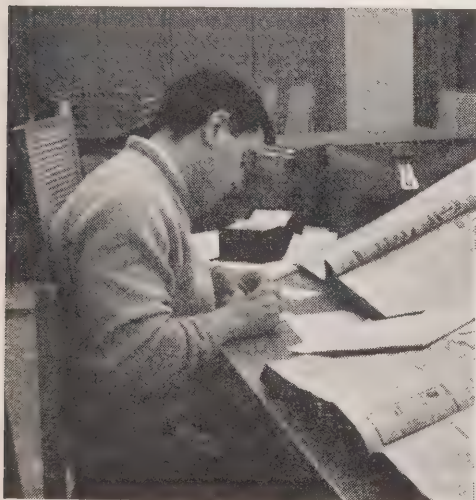
The Historical Branch is comprised of four Divisions. The *Manuscript Division* contains manuscript collections and public records, each arranged in groups. Manuscript groups include private papers of statesmen and other distinguished citizens, records of cultural and commercial societies, copies of records in France, England and other countries relating to Canada. Record groups consist of selected records of all departments and agencies of the Government of Canada. The *Picture Division* has charge of documentary paintings, water colours, engravings and photographs relating to people, historical events, places and objects. It also has a heraldry unit and a sound recordings unit. The *Map Division* has custody of thousands of maps and plans pertaining to the discovery, exploration and settlement of this country, as well as topographical maps of Canada. It maintains a large collection of current topographical maps of foreign countries. The *Library* contains more than 80,000 volumes on Canadian history, including numerous pamphlets, periodicals and government publications.

Although documents in the Archives may not be taken out on loan, they may be consulted in the building, and a 24-hour-a-day service is provided for accredited research workers. Reproductions of available material may be obtained for a nominal fee on request and many of the documents in the Manuscript Division are on microfilm which may be obtained on inter-library loan.

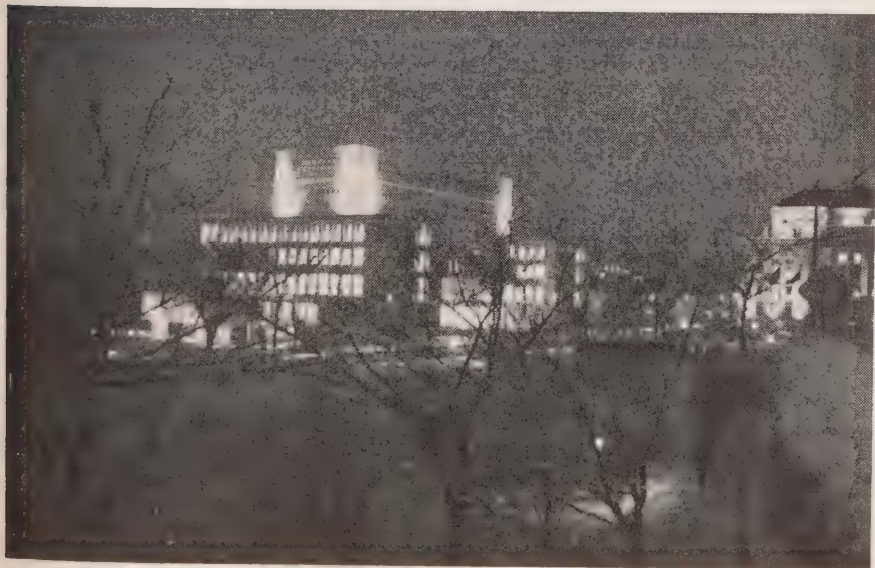
The Records Management Branch assists departments and agencies in records management. Its service includes recommendations and advice on scheduling and disposal of records and the provision of the necessary storage, reference service and planned disposal of dormant records on an economical basis. Regional Centres are being established in major cities across Canada.

The Administration and Technical Services Branch attends to the administrative needs of the Archives and provides a technical and advisory service on microfilming to government departments and agencies. Microfilm work is done for departments at cost.

Branch offices of the Public Archives are located in London, England, and Paris, France.



Canada's National Library and Public Archives, recently located in their new building, are repositories of some of the nation's most valued treasures. Here records of the past may be leisurely perused in reading rooms or long periods of study may be carried out in solitude in small private rooms.



CHAPTER VIII.—SCIENTIFIC AND INDUSTRIAL RESEARCH*

CONSPECTUS

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SECTION 2. RESEARCH BY FEDERAL GOVERNMENT ORGANIZATIONS AND RESEARCH IN SPECIFIC DISCIPLINES.....	385	Subsection 1. Provincial Organizations.....	410
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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Organization of and Expenditures on Scientific and Industrial Research in Canada

The organization and distribution of the research and development effort in Canada are partially the result of certain characteristic problems of this country, especially its large area, its relatively small population and peculiar population distribution, and its unusual industrial structure. However, there are indications that certain major shifts in the previous pattern of effort may be close at hand, caused by the emergence of organizations concerned with science policy questions and the recent general recognition of the growing importance of science and technology to modern society.

Early research in Canada was related mainly to the primary industries. Geological mapping and agricultural research were almost the only areas of scientific activity until the beginning of the present century. In 1898 research and development in the field of fisheries was assigned to an independent honorary board (the Biological Board) which has continued to the present as the Fisheries Research Board. In 1916 the Federal Government set up the National Research Council, the early duties of which were to encourage and stimulate research in the universities and industry. It later undertook research activities with the establishment of its own laboratory system in the late 1920s and early 1930s. A great expansion in scientific research and development took place during the Second World War. The National Research Council assumed responsibility for research and development activity for the three Armed Services and for the development of atomic energy. After the War, in 1947, the Defence Research Board was set up in the Department of National Defence to take over the responsibility for military research

* Sections 1 and 4, Subsection 1 of Section 5, and Section 6 were prepared by the Science Council of Canada.

and development (see Chapter XXVI) and, in 1952, the Crown corporation Atomic Energy of Canada Limited was established to proceed with the development of atomic energy in Canada, and the National Research Council returned to its previous activities. Also, certain other Crown corporations, such as Eldorado Mining and Refining Limited (now Eldorado Nuclear Limited), Polymer Corporation Limited, and Canada's largest national utility, the Canadian National Railways, developed important research programs. In 1960 the Medical Research Council was established in association with the National Research Council.

Until the 1950s, industrial research was slow to develop in Canada, although certain large industries, particularly the chemical industry and the pulp and paper industry, had long histories of successful research and development effort. Through the efforts of the industrial companies themselves and by means of various government-sponsored incentive programs, the industrial research and development effort in Canada has since grown and diversified considerably. In addition, provincial research councils were set up both before and after the War in several provinces, usually for the general purpose of improving the provinces' utilization of their resources and the production efficiency of their industries. Of these, the Ontario Research Foundation and the British Columbia Research Council, although established under provincial legislation, are self-governing institutions engaged in research and development on contract for manufacturers, departments of government and on their own account, and derive their current revenue mainly from sponsored research. Furthermore, the Pulp and Paper Research Institute of Canada (see Chapter XII, pp. 553-554) is the one major research association that operates on a co-operative basis; its operating funds are provided by industry and its facilities by the Federal Government and McGill University, all three vitally interested in ensuring that this industry maintains its competitive position in world markets. Previously, the primary resource base of industry generally was not conducive to the establishment of industrial research laboratories. As well, the degree of foreign ownership of manufacturing companies in Canada undoubtedly had some influence on the development of industrial research, since Canadian subsidiaries of foreign companies had ready access to the research and development results of their parent companies. As a result of the consequent lack of incentives, all but a few of these subsidiaries refrained from establishing their own laboratories and from developing products specifically for the Canadian market. However, to meet the challenge of competition from other countries in the production of sophisticated modern items of manufacture, much of Canadian industry is now significantly increasing its own scientific and technical investigations. The Sheridan Park Research Community, just outside Metropolitan Toronto, is an example of the latest concept for improving the efficiency of and expanding industrial research in Canada. A somewhat similar but more diffuse development took place earlier at Pointe Claire, near Metropolitan Montreal. Industrial research centres of this type facilitate applied research and development activities for the scientists and engineers involved by permitting ready interchange of non-proprietary scientific and technical information and access to a wide variety of instrumentation, equipment and skills. They also provide an attractive environment for skilled personnel, and thus increase Canada's potential for keeping its trained scientists and engineers. At Sheridan Park the research laboratories of nine individual companies are in full operation and there is room for further corporate participants. A Conference Centre has been built and the community members have formed an association to promote and expedite many other mutually desirable arrangements.

A significant element in the training of scientists and engineers beyond the undergraduate level involves the research and development activities undertaken in the universities as part of their program of graduate studies. These research and development activities are related directly to the educational process and are of great importance in the training of the skilled personnel needed for the development of Canada's economy; they have a further importance in that they create centres of basic research in Canada and therefore act as listening posts tuned to the progress of science and technology in other parts of the world.

Thus, there are three main sectors of research and development in Canada—research and development in government, in industry and in the universities. These three elements are covered in some detail in the remainder of this Chapter.

Mechanism for the Federal Science Policy.—In the federal sphere, the ultimate authority for policy on science resides in the Cabinet. To exercise this authority there was established by the Research Council Act (RSC 1952, c. 239, as amended) a Cabinet committee known as the Committee of the Privy Council on Scientific and Industrial Research. This Committee comprises those Cabinet Ministers having departments with major scientific responsibilities and certain other Ministers who have an indirect concern with scientific affairs. These federal departments and agencies advise the Privy Council Committee on the scientific aspects of their own departmental responsibilities and on the organization and support of research required for their own purposes. For many years, the National Research Council, on the other hand, advised the Committee on general science policy, particularly on research in the universities, in industry and in fields not specifically the responsibility of departments or agencies. Then, in 1949, the Privy Council Committee broadened the structure of its advisory mechanism by the addition of an Advisory Panel for Scientific Policy to which the Privy Council Committee could turn for joint advice on the formulation and conduct of government scientific policies. At the present time, the Advisory Panel consists of senior officials from the science-based departments and agencies, with the Clerk of the Privy Council as Chairman and the Director of the Science Secretariat as Vice-Chairman.

In 1964, as a result of the recommendations of the Royal Commission on Government Organization, a Science Secretariat was created in the Privy Council Office with the task of assembling and analysing information on the Government's scientific and technological activities, as well as those of industry, the universities and the provinces, particularly in relation to the activities and concerns of the Federal Government. The Science Secretariat has since also taken responsibility for advising the Department of External Affairs on the selection of Counsellors (Scientific) for placement in certain Canadian Embassies abroad, and on the distribution of reports received from these Counsellors.

In 1966, the Federal Government established the Science Council of Canada. This is an independent body which has the duty of assessing Canada's scientific and technological resources, requirements and potentialities, and making recommendations thereon by the publication of reports. The Science Council is concerned both with research and development and with the use of science and technology in the solution of Canada's social and economic problems. It reports to the Prime Minister and draws its membership from industry, the universities and government. The Science Council has had, since 1968, its own executive arm. For the first two years of its existence, it received professional and administrative support from the Science Secretariat.

In its first two years, the Science Council initiated intensive studies of science and technology in Canada in order to provide a basis for advice on the formulation of policies and plans for the future. Several reports have been published, both background reports and Science Council reports. The background reports include detailed surveys of the upper atmosphere and space programs in Canada, physics research, psychology, the proposal for an intensive neutron generator, and water resources research in Canada. The Science Council reports include those on space, the intense neutron generator, and water resources research. In addition, the Science Council has published a science policy report which includes the recommendation that Canada focus its scientific and technological effort through the creation of Major Programs designed to solve social and economic problems. Such programs include, among others, a space program for Canada, water resources management and development, transportation, urban development, computer applications and scientific and technological aid to developing areas of the world. The Science Council is continuing its study of these and various other possible Major Programs from the viewpoints of cost-benefit, organization, direction and funding.

In 1967, a Senate Committee on Science Policy was formed to consider and report on the scientific policy of the Federal Government with the object of appraising its priorities, its organization, its budget and its efficiency. A number of hearings have been held and the Committee intends to issue a report containing its findings at the end of its investigation.

In addition, as part of its studies of the national science policies of the individual member countries, the Organization for Economic Co-operation and Development (see p. 147) is issuing a review of Canadian science policy which will undoubtedly be of help to those designing Canada's future in this area.

Research and Development Expenditures in Canada.—In the present decade, Canada's gross expenditures on research and development (GERD) have more than doubled (Chart II) and government has remained the major contributor to research and development funds (Chart III). In 1965-66, Canada's "current" expenditures on research and development amounted to some \$524,400,000, divided as shown in Table 1.

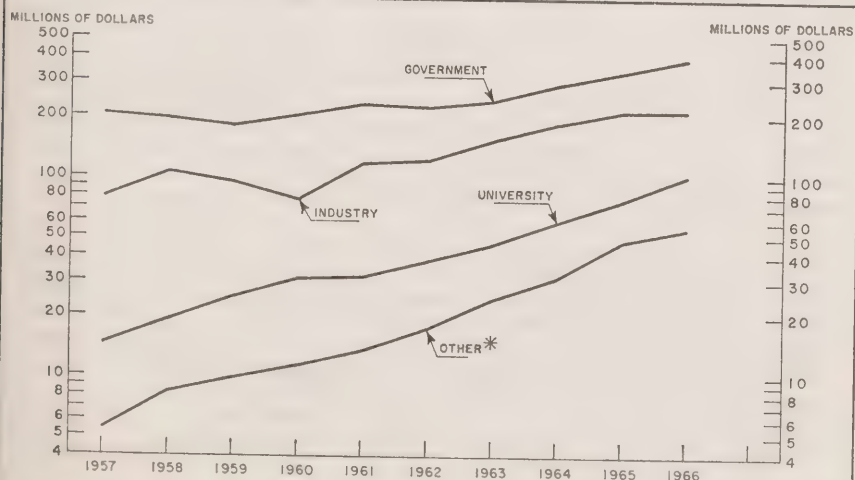
1.—Percentage Distribution of Current Expenditures on Research and Development, by Sector of Performance and by Type of Activity, 1965-66

Sector of Performance	Type of Activity			
	Basic Research	Applied Research	Development	Total
	p.c.	p.c.	p.c.	p.c.
Government (all levels).....	7	23	6	36
Industry.....	2	12	30	44
Higher education.....	13	5	1	19
Private non-profit.....	—	1	—	1
Totals.....	22	41	37	100

CHART I

GROSS CONTRIBUTIONS TO R & D BY SOURCES OF FUNDS

YEARS ENDED MAR. 31, 1957-66

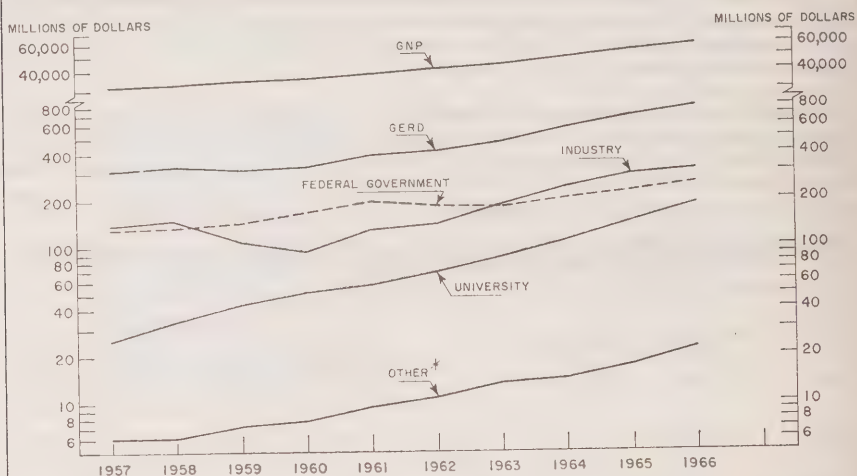


* PRIVATE NON-PROFIT AGENCIES, PROVINCIAL GOVERNMENT AGENCIES AND FUNDS FROM ABROAD.

CHART II

GNP, GERD AND EXPENDITURES ON R & D BY SECTOR

YEARS ENDED MAR. 31, 1957-66

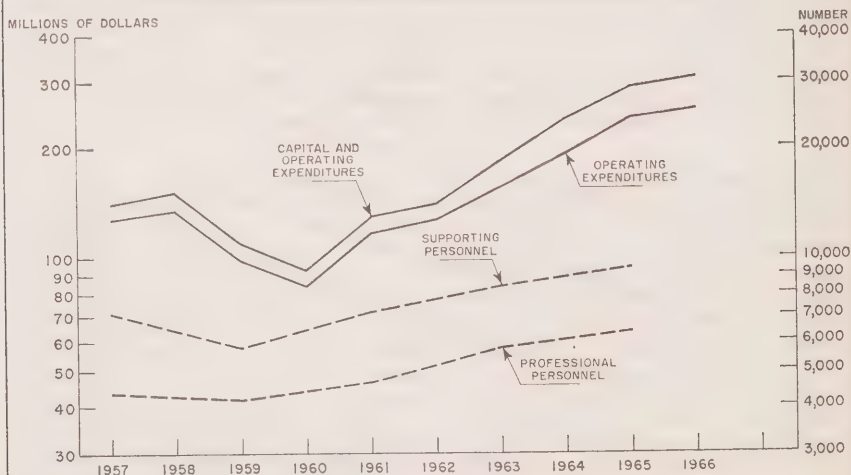


* PRIVATE NON-PROFIT AND PROVINCIAL GOVERNMENT AGENCIES

CHART III

GROWTH OF CANADIAN INDUSTRIAL RESEARCH AND DEVELOPMENT

YEARS ENDED MAR. 31, 1957-66





A microwave dryer capable of rapidly extracting unwanted water from everything from glue to plastic sheeting for films is one of NRC's inventions that is being backed for commercial production by Canadian Patents and Development Limited. It is the responsibility of that Crown corporation to license for commercial exploitation the inventions of government scientists.

Section 2.—Research by Federal Government Organizations and Research in Specific Disciplines

Research activities in the various Federal Government departments and agencies have expanded rapidly, at first because of the need for speeding up the production of raw materials, which were long the basis of Canada's export trade, and later because of increasing interest in the processing of raw materials, the necessity of meeting the needs of national defence and the developing consideration for many human and resource requirements. In addition to the activities of the National Research Council, Atomic Energy of Canada Limited and the Department of Energy, Mines and Resources dealt with in Subsections 2 to 5, there are a number of other federal agencies involved in research, as shown in Table 3, p. 387.

The scientific work of the Department of Agriculture is described in Chapter XI of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XXI, the specialized work in scientific forest research in Chapter XII, scientific services concerned with Canada's mineral resources conducted by the Department of Energy, Mines and Resources in Chapters I and XIV, investigational work of the Department of Fisheries and the Fisheries Research Board in Chapter XIII, research of the Canadian Wildlife Service of the Department of Indian Affairs and Northern Development in Chapter I, medical and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, and the work of the Defence Research Board in Chapter XXVI.

The Department of Indian Affairs and Northern Development operates a permanent scientific research laboratory north of the Arctic Circle. This laboratory, at Inuvik,

N.W.T., has year-round facilities specially designed for arctic research and serves as a base for extensive field studies in the Western Arctic. It can accommodate up to 16 scientists in all fields of scientific endeavour. The operation of the laboratory is in charge of a manager working under the direction of the Chief of the Northern Science Research Group of the Department.

Subsection 1.—Expenditures by the Federal Government on Scientific Activities

Information on the expenditures of the Federal Government for scientific activities is provided by annual surveys carried out by the DBS. Each survey covers the actual costs of the preceding fiscal year and the estimated expenditures of the current year on the scientific programs of the reporting departments and agencies. At present, only activities in engineering and technology and in the physical and life sciences are included, although eventually the surveys will be expanded to include the social sciences. For survey purposes, "scientific activities" consist of research and development, scientific data collection, scientific information, testing and standardization, and scientific scholarship and fellowship programs. Data are also collected on capital expenditures on plant for scientific activities and on personnel employed in research and development.

The total amount spent by the Federal Government in support of scientific activities increased substantially during the period shown in Table 2; annual increases were approximately 19 p.c., 12 p.c., and 23 p.c. The activity of greatest importance is the conduct of research and development, which accounts for over 66 p.c. of the total current expenditures on scientific activities over the four years shown. Research and development, as defined in DBS surveys and reports, includes the performance, administration and planning of research and development by way of intramural activities, grants in aid of research and contracts to other organizations. Grants intended to support the recipient in a research project are considered to be funds for research and development. These grants in aid of research, which formerly consisted largely of grants for research in universities, now include sizable grants, through special assistance programs, for industrial research. Furthermore, some of the expenditures, although current for the Federal Government, are actually used for the capital programs of the recipients.

2.—Summary Statistics of Federal Government Expenditures on Scientific Activities, Years Ended Mar. 31, 1965-68

Activity and Department or Agency	1964-65	1965-66	1966-67	1967-68 ¹
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Scientific Activity—				
Research and development.....	228.8	282.3	318.2	394.5
Scientific data collection.....	43.5	47.5	53.7	68.6
Scientific information.....	13.1	15.5	18.0	20.7
Testing and standardization.....	14.6	18.0	19.3	20.5
Scholarship and fellowship programs.....	3.9	5.2	6.7	9.2
Capital expenditures on plant for scientific activities.....	52.3	57.0	59.8	71.0
Totals, Scientific Activities.....	356.2	425.5	475.7	584.5
Department or Agency—				
Agriculture.....	33.4	36.8	40.3	48.5
Atomic Energy of Canada Limited.....	53.1	54.9	62.6	70.4
Energy, Mines and Resources.....	43.5	52.9	65.0	84.7
Industry.....	20.5	24.3	27.2	36.9 ²
National Defence—				
Armed Forces.....	30.7	45.6	36.1	33.6
Defence Research Board.....	39.2	43.6	45.6	54.8
National Research Council (incl. Medical Research Council).....	60.8	79.7	102.4	131.6
Transport.....	31.2	32.1	30.5	33.2
All others.....	43.8	55.6	66.0	90.8

¹ Forecast.

² Including \$2,300,000 budgeted for the Industrial Research and Development Incentive Act (IRDIA) grants; there is not a real increase in government expenditures of this amount since the IRDIA program replaces the additional allowance of Section 72A of the Income Tax Act.

Table 3 shows the expenditures of various departments and agencies of the Government on scientific activities. In 1966-67, the departments supporting defence and industry accounted for about 23 p.c., the five natural resource departments for 31 p.c., the National Research Council for 19 p.c., the two agencies concerned with atomic energy for 13 p.c., and medical research and training for 5 p.c.

3.—Federal Government Expenditures on Scientific Activities, by Department or Agency, Years Ended Mar. 31, 1967 and 1968

Department or Agency	1966-67 ¹				1967-68 ²			
	Current Expenditures on Research and Development	Current Expenditures on other Scientific Activities	Capital Expenditures	Total Funds Applied	Current Expenditures on Research and Development	Current Expenditures on other Scientific Activities	Capital Expenditures	Total Funds Applied
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Department of Agriculture.....	33.5	0.9	5.9	40.3	36.4	1.2	10.9	48.5
Atomic Energy of Canada Limited.....	48.5	0.2	13.9	62.6	57.7	0.1	12.6	70.4
Department of Energy, Mines and Resources.....	20.9	29.1	15.0	65.0	26.3	42.8	15.6	84.7
Department of Fisheries.....	13.9	0.2	5.3	19.4	17.3	0.2	6.7	24.2
Department of Forestry and Rural Development.....	10.9	5.2	2.4	18.5	13.5	6.6	4.0	24.1
Department of Indian Affairs and Northern Development.....	1.9	0.8	0.8	3.5	2.8	0.8	1.1	4.7
Department of Industry.....	27.2	—	—	27.2	36.9	—	—	36.9 ^a
Medical Research Council.....	11.4	1.1	—	12.5	18.7	2.1	—	20.8
Department of National Defence—Armed Forces.....	17.4	17.9	0.8	36.1	14.5	18.5	0.6	33.6
Defence Research Board.....	43.5	0.2	1.9	45.6	51.8	0.2	2.8	54.8
Department of National Health and Welfare.....	9.4	2.0	2.6	14.0 ³	18.6	2.8	2.3	23.7 ^a
National Research Council.....	72.0	10.5	7.4	89.9	88.1	12.4	10.3	110.8
Department of the Secretary of State.....	0.7	1.0	0.1	1.8	1.0	1.3	—	2.3
Department of Transport.....	2.8	24.1	3.6	30.5	4.5	24.7	4.0	33.2
Department of Veterans Affairs.....	0.4	—	—	0.4	0.4	—	—	0.4
All other departments or agencies.....	3.8	4.5	0.1	8.4	6.0	5.3	0.1	11.4
Totals, All Departments and Agencies.....	318.2	97.7	59.8	475.7	394.5	119.0	71.0	584.5

¹ Forecast.

² Including \$2,300,000 budgeted for IRDIA grants. research facilities from the Health Resources Fund.

³ Including grants for medical

The Federal Government is the sole source of funds considered here but it is not the sole performer. Although most of the Government-funded research and development continues to be performed within its own establishments, the Government's support of outside research has increased noticeably during the past four years. The relative expenditures on the Government's intramural program decreased from about 67 p.c. in 1964-65 to about 61 p.c. in 1967-68, while Canadian educational and non-profit institutions received a greater share, which increased by about 38 p.c. over 1964-65. The proportion of Government funds used to support industrial research and development programs varied from 20 p.c. in 1964-65 to a high of 23 p.c. in 1965-66, followed by a decrease to 18 p.c. in 1966-67 and an expected 17 p.c. in 1967-68. Atomic Energy of Canada Limited, the National Research Council, and the departments of Industry and National Defence are the major supporters of industrial research and development contracts and grants, the latter two departments contributing 80 p.c. of the amount spent in 1966-67. The National Research Council, the Medical Research Council and the Department of National Health and Welfare distributed nearly 85 p.c. of all funds for support of research in Canadian educational and non-profit institutions in 1966-67.

4.—Federal Government Current Expenditures on Research and Development, Years Ended Mar. 31, 1965-68

Performing Organization	1964-65	1965-66	1966-67	1967-68 ¹
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Reporting unit.....	153.0	173.3	201.1	240.4
Canadian industry ²	45.0	65.6	58.9	67.2 ³
Canadian educational and non-profit institutions ²	29.8	41.5	53.2	71.0
Others (incl. provincial governments and foreign recipients) ²	1.0	1.9	5.0	15.9
Totals, Expenditures.....	228.8	282.3	318.2	394.5

¹ Forecast.
IRDA grants.

² Funds received may be used for capital projects.

³ Including \$2,300,000 budgeted for

It is estimated that a full-time equivalent of about 17,775 persons was engaged in Government intramural research and development in 1966-67. Of these, nearly 5,000 were scientists or engineers. Approximately 39 p.c. of total professional personnel engaged in research and development in 1966-67 were trained in the field of the life sciences, while those trained in the physical sciences and engineering accounted for 37 p.c. and 23 p.c., respectively, of the total number of scientists and engineers. Atomic Energy of Canada Limited, the National Research Council, and the departments of Agriculture, National Defence, and Energy, Mines and Resources employed about 80 p.c. of the scientists and engineers and nearly 85 p.c. of the supporting personnel engaged in research and development.

Subsection 2.—The National Research Council of Canada*

Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the National Research Council. From an initial budget of \$91,600 (only \$50,375 was actually expended) to one of \$101,000,000, the Council has expanded until now it has some 45 Associate Committees studying a wide range of problems, supports the research efforts of 3,483 university scientists and awards 2,455 scholarships, bursaries and postdoctorate fellowships. In recognition of its activities in support of research in the universities during the past 50 years, the Council has established a group of scholarships called the 1967 Science Scholarships, awarded for the first time in that year. These awards are intended to encourage young men and women of outstanding intellectual promise to pursue postgraduate studies and research leading to doctorate degrees in science and engineering in Canadian universities other than the ones from which they obtained their first degrees. It is hoped that these awards will stimulate exchanges between different cultural and geographical regions of Canada, in keeping with the aims of the commemoration of the 1967 Centennial of Confederation.

The planning and integration of research work, organization of co-operative studies, postgraduate training of research workers, and prosecution of research through grants to university professors formed the basis of the Council's work from 1916 to 1924. As early as 1918, the creation of a central research institute to carry on research in pure science in relation to standards of measurement, quality and composition of material, and research in science applied to the industries of Canada, had been urged and a special committee of Parliament endorsed the proposal. Temporary quarters were secured in 1925 and research on magnesian refractories for steel furnaces was carried out so successfully that an industry established during World War I was re-established on a large scale. As a result of this achievement, the Government in 1929-30 provided funds for new research facilities. The National Research Building on Sussex Drive in Ottawa was opened in 1932 and in 1939

* Revised in the Public Relations Office, National Research Council of Canada, Ottawa.

construction was begun on an aerodynamics building located on the Montreal Road, just east of the city. This site now comprises some 400 acres and houses most of the Council's laboratories. A prairie Regional Laboratory built on the campus of the University of Saskatchewan in Saskatoon has been in operation since June 1948 and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax has been in operation since June 1952.

Under the terms of the Research Council Act, the Council has charge of all matters affecting scientific and industrial research in Canada that may be assigned to it by the Committee of the Privy Council on Scientific and Industrial Research. In discharging these responsibilities, the Council may undertake, assist or promote research. Its duties include the utilization of Canada's natural resources; the improvement of industrial processes and methods; the discovery of processes and methods likely to expand existing industries or to develop new ones; the utilization of industrial wastes; investigation and determination of physical standards, methods of measurement, and fundamental properties of matter; the standardization and certification of scientific and technical apparatus used by government and industry; the determination of standards of quality for materials used in public works and government supplies; investigation and standardization, at the request of industry, of industrial materials or products; and research intended to improve conditions in agriculture. As a service to Canadian science, the Council maintains scientific liaison offices in Ottawa, London, Washington and Paris. The liaison officers abroad also serve as scientific attachés in the Canadian diplomatic missions. The National Research Council Library, with holdings of more than 683,000 volumes in science and technology (including over 15,000 journals and other serials), acts as the National Science Library of Canada (see also p. 376).

The Council's laboratories are organized in ten divisions and two regional laboratories, each with its own director. Six divisions are engaged in applied and fundamental studies in the natural sciences—biosciences, applied and pure chemistry, applied and pure physics and radiation biology. Four others are devoted chiefly to engineering work—building research, mechanical engineering, radio and electrical engineering, and the National Aeronautical Establishment. The two regional laboratories carry out research related to the resources of the Prairie and Atlantic regions. A Medical Research Council, responsible for the support of medical research but functioning under the general administration of the National Research Council, was established in November 1960; it now reports to Parliament through the Minister of National Health and Welfare (see pp. 277-278).

The National Research Council Act at present provides for a President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour, and research in science and engineering. Many of the members are drawn from Canadian universities. The Council reports to the Committee of the Privy Council on Scientific and Industrial Research through a Minister designated by the Governor in Council for the purposes of the National Research Council Act.

The Council's 1967-68 budget, excluding the provision for the activities of the Medical Research Council, was about \$101,000,000, approximately \$45,500,000 of which was required for foundation work—scholarships and research grants in science and engineering. The remainder was used to operate the laboratories and to provide for the Council's industrial research assistance program. Of the Council's 3,039 employees, 890 are scientists and engineers.

Links with Industry.—The application of science to Canadian industry has always been one of the major concerns of the National Research Council. Since 1917, representatives of industry, government and the universities have co-operated, through NRC Associate Committees, in solving pressing industrial and economic problems. There is a constant flow of personnel and information between NRC laboratories and those of industry, and roughly 70 p.c. of the Council's own effort involves applied research intended

for industrial use. Contract research on specific projects and a wide variety of testing and standardization work are undertaken. Inventions from NRC laboratories are carried through the patent stage, then made available for manufacture through Canadian Patents and Development Limited.

A most important activity of the Council is its Technical Information Service which consists of field engineers who visit manufacturing establishments and a staff of trained researchers in Ottawa who use the technical literature available through the Council's library. Although all inquiries are handled, the Service is particularly interested in helping small firms with no research or information facilities. Free advice is given on all aspects of materials and processing, equipment, plant design and packaging and on such topics as wage incentives and inventory control.

Direct financial assistance for research performed by Canadian industry was begun by the Council during 1962. Under this arrangement the Council makes grants supporting long-term applied research and development work proposed and carried out by industry. Aid is given on a shared-cost basis, with industry supplying at least half of the funds for any one project. Companies of all sizes, representing a wide range of industrial activity, are eligible for assistance and the companies retain all rights arising from the work. In 1967-68, at a cost of \$5,700,000, the Council supported 32 new research projects and 123 continuing projects in 90 Canadian firms.

Biosciences.—The program of the Division of Biosciences covers practical problems related to the national economy and fundamental studies that may contribute useful information in such areas as agriculture, medicine and certain industries. Apparatus and techniques for preparing, preserving and storing food make up a large part of the applied work and particular attention has been given recently to food freezing, cold storage in jacketed rooms and refrigerated transport. Study and testing have continued on a process now widely used in industry for the immersion-freezing of poultry, quality loss in poultry meat during freezing and refrigerated storage, and an improved cooling system for frozen food trucks. The physical and chemical reactions influencing coagulation in evaporated milk during sterilization are being investigated. Microorganisms related to food are studied, particularly those that grow in cheese, in high salt concentrations and at low temperatures. Model systems for the study of freshwater microbial ecology are under investigation. A national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Considerable effort is devoted to questions of animal and plant physiology. Studies of the mechanisms by which mammals, birds and man adapt to cold have provided important basic information on cell, muscle and metabolic activity, and help to explain practical problems such as the high death rate of newly born caribou. Fundamental plant processes such as translocation are investigated, and a study is being carried out on strains of blue-green algae believed responsible for cattle deaths. Plant fibres such as cellulose—the skeletal material of plants—and the structure and function of plant cell components are also examined.

Other studies involve fermentation mechanisms and enzymology, and the structures of proteins, polysaccharides and lipids. One group, among its other projects, is engaged in long-term statistical studies of protein variability in wheat, a factor that influences overseas wheat sales. The work has been expanded recently to include the effects of weather factors on protein content.

Radiation Biology.—The general objective of the Division of Radiation Biology is to undertake fundamental research into the effects of radiation on living things and their components. This is best done by combining the efforts of scientists in several biological disciplines.

To date, biochemical studies have included theoretical studies of radiation doses resulting from internal contamination of workers, the action of X-rays on purified en-

zymes, the action of ultraviolet light on nucleic acid components, and the metabolism of radioactive tellurium in animals. The most prominent causes of death of animals or men from exposure to ionizing radiations are destruction of the blood-forming tissues (spleen and bone marrow) and severe damage to the intestinal wall; in addition, sublethal doses of radiation cause immediate destruction of lymphatic tissues such as the thymus gland. Therefore the Division has devoted considerable effort to investigating the effects of gamma-rays on these three types of tissues.

Applied Chemistry.—The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved the solving of immediate specific problems, a larger part of the effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results. For instance, a long-term investigation on the contacting of fluids and solids—an operation vital to many chemical engineering procedures—has resulted in a successful commercial operation for drying grain. The same method has been extended to chemical reactions and to removing liquids from other materials.

Another long-term project of considerable industrial potential has concerned the factors responsible for the stability, or the destruction, of suspensions of solids in liquids and a method was devised for easily separating almost any suspended solid from the liquid surrounding it. The same technique can be used to prepare dense spherical agglomerates of selected composition. Work on separation processes has been expanded to include the separation of dissolved solids. It has been shown that virtually all dissolved salts can be removed from water by filtration through an appropriate medium, and tests with other materials are in progress. Then, too, the study of chemical reactions at very high pressures—carried on over the past several years—has resulted in the successful preparation of a stable polymer that could not be produced by conventional means. The development of a procedure for anodically depositing metal oxide films resulted from long-term studies on metallic corrosion. These films may have considerable potential as decorative or protective coatings, or to impart desirable electrical properties to the deposited layer.

The 11 sections of the Division are: analytical chemistry, chemical engineering, colloid chemistry, high polymer chemistry, high pressure, kinetics and catalysis, metallic corrosion and oxidation, metallurgical chemistry, physical organic chemistry, hydrocarbon chemistry and textile chemistry. Much of the work falls under the general headings of petroleum or metal chemistry, in that several sections work on topics related to one of these fields.

Pure Chemistry.—The Division of Pure Chemistry has a small permanent staff that works in collaboration with about 50 young postdoctorate fellows from all over the world. The work consists of long-term fundamental investigations in organic, physical and theoretical chemistry designed to provide new basic knowledge.

The work in organic chemistry includes investigations of the structures of alkaloids, studies of the infrared spectra of steroids, and the synthesis of nucleic acids, porphyrins and of compounds labelled with isotopes. Other groups deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, organic crystal semi-conductors, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others investigate the thermal properties of simple solids, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the adsorption of fluids by active carbons. Theoretical studies cover quantum-mechanical and many-body problems.

Applied Physics.—The work in applied physics is divided between research in fields of physics deemed most likely to contribute in a practical way to the Canadian economy

and research to improve the accuracy and precision of fundamental physical standards on which all measurements are based. All the fundamental physical standards for Canada are the responsibility of the Division of Applied Physics, which has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature, photometry and radiation. The sections of the Division are: acoustics, diffraction optics, electricity, heat and solid state physics, high temperature physics, instrumental optics, optical physics, mechanics, photogrammetric research, radiation optics, and X-rays and nuclear radiations.

Examples of specific projects under way include a study of physiological noise and its relationship with the threshold of hearing, resulting in the development of a new probe microphone which should find wide application in sound measurement; new precision and accuracy are envisaged for audiometers of great importance in connection with hearing loss in industry and elsewhere; researches directed toward improving the resolving power of optical systems, the design of a hydrogen maser offering potential as a frequency standard for defining time, measurements on various metals and ceramics aimed at elucidating the mechanism of heat transfer at high temperatures, the establishment of an international standard neutron source, and investigation and application of the very intense and very monochromatic radiation emitted by gas lasers. Several of the Division's developments are being produced commercially; among these are noise-excluding ear defenders, a revolutionary analytical plotter for making maps from aerial photographs (available in two models—one for military and the other for civilian use), six- and five-figure potentiometers, a precision direct-reading thermometer bridge, an instrument for measurement of resistance to a precision of one part per million, and a new instrument for measuring more accurately and quickly electrical voltages of up to 3,000 volts.

To permit standardization of X-rays and nuclear radiations at higher energies and for general research in the energy range, the Division has installed a 4-MeV Van der Graaff generator and a 40-MeV linac facility which went into full operation in 1968.

Pure Physics.—Investigations are under way on cosmic rays and high-energy particle physics, solid state physics, laser and plasma physics, spectroscopy, and X-ray diffraction. The work is on fundamental problems which do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields. Important advances in the study of cosmic rays and energetic particles are being made by means of a specially designed instrument package operating aboard the Canadian earth satellite *Alouette II*. The package is sending back vital new information about the Van Allen radiation belts and about the artificial belts created by atomic explosions.

The solid state group studies the electrical, thermal and mechanical properties of metals and semi-conductors especially at very low temperatures. The laser and plasma physics group, established in 1962, has already made an important contribution by observing the scattering of a ruby-maser beam by a plasma. This study leads to a determination of electron temperature and electron concentration. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their microwave, visible and ultra-violet spectra, and considerable work has been done on optical masers.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. Two of the major projects concern narcotics and vanadium minerals. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material.

Building Research.—The provision of a comprehensive research service for the construction industry of Canada is the primary concern of the Division of Building Research. Its program therefore covers various aspects of construction, building design, building materials and components, fire research, and studies in soil, snow and ice mechanics; it also serves as the technical research wing of the Central Mortgage and Housing Corpora-

tion. To assist in the research and information functions of the Division, Regional Stations are located at Halifax, N.S., Saskatoon, Sask., and Vancouver, B.C. An Information Office is located at Toronto and field stations at Thompson, Man., and Inuvik, N.W.T.

Division projects are concerned with: the behaviour of cement, concrete, mortars, plasters, plastics and sealing and caulking compounds; atmospheric corrosion of metals and paint research; acoustics research; the over-all performance of foundations, walls, windows and roofs; humidity in buildings; air-conditioning design; snow and wind loads on structures; the properties of various soil types including permafrost and muskeg; and the effects on buildings of ground vibrations caused by earthquakes. A fire research laboratory contains facilities for studying the initiation, development and extinguishment of building fires as well as for fire tests on materials and structures.

Because concentration is placed on building problems peculiar to Canada, much of the work concerns the performance of buildings and building materials in cold weather. Double-glazed windows and lightweight metal and glass curtain walls, used increasingly in modern buildings, have been examined, improvement of winter building techniques has been studied, and the work of one section is devoted to problems of building in the Far North. Educational work is conducted in a number of directions to alert the designers, manufacturers and others to new principles and new information as well as to design features that should be avoided. Similar liaison exists with federal and provincial public works departments and many useful field studies have been made on public and privately owned buildings.

Many results of the Division's research are used in the improvement of the National Building Code, an advisory document offered as a model building by-law, and now used by municipalities accounting for about three quarters of the urban population of Canada. The Division also provides the secretariat and considerable technical assistance to the Associate Committee that produces the Building Code on behalf of the National Research Council.

Mechanical Engineering.—Although this Division of the National Research Council is concerned broadly with problems in mechanical engineering, the form of current developments in Canada naturally requires a reasonably sharp specialization within the broad field. Despite pressure in the engineering world for immediate results, it is essential that this type of work be supported by a substantial foundation of general research.

In the present vigorous stage of engineering development in Canada, the general work of the Division is being related to the thermodynamic aspects of engineering production by conventional machinery and by application of fluid mechanical principles to the generation of extreme temperatures in high-pressure gases. In support of the human contribution to higher productivity, the other general body of work relates to the behaviour of the human operator—his dexterity and capability and the effects on his performance of fatigue, lack of sleep, and alcohol. The more specific activities of the Division are related to processes of production and to transportation.

In view of the enormous importance in Canada of the lumbering industry, and the corresponding economic advantages of saving waste wherever possible, some work is in hand to assess the sawing of lumber by means of high-pressure water jets.

In the manufacturing aspects of mechanical engineering, the Division has long been active in the solution of problems—both thermodynamic and mechanical—of the different kinds of heat engines and is concentrating on matters particularly pertaining to diesel engines and gas turbines. In its experimental shops it is introducing improvements and refinements in a number of manufacturing processes, such as the precision grinding of gearing, electrodischarge machining and electrochemical machining, which experimental work may prove of interest and use to various manufacturers. As a subsidiary part of the work on manufacturing techniques, the Division has in hand a substantial body of development work related to the improvement of surgical instruments and apparatus, the first of which is now going into commercial production.

Because of the importance of all forms of transportation of primary consequence to the economic and social well-being of Canada, substantial research in this direction has been conducted for a number of years. The land transport work has arisen from problems with urban bus systems and with railway operations and includes programs relating to the operation of diesel locomotives on a wider range of fuels, to the improvement of air brake operation in winter, to the braking and running smoothness of long trains, and to the improvement of remote switching necessary for central traffic control. In the area of sea transport, the Division is concerned with ship design and canal and harbour facilities arrangements. A steady procession of new ship designs passes through the ship laboratory for investigation of hull lines, propeller design, steering and rough water characteristics, supplemented by a program of work at sea on the stresses on ships running in rough water. Work is under way on a model of the St. Lawrence River extending from Montreal to Father Point, the object of which is to lend the maximum possible scientific impetus to the development of the Port of Montreal. The activities of the Division in the field of air transport are currently concentrated on acquiring a reasonably wide-based and intimate knowledge of the possible machinery arrangements for civil vertical take-off aircraft, which are believed to represent one of the great aeronautical opportunities of the future.

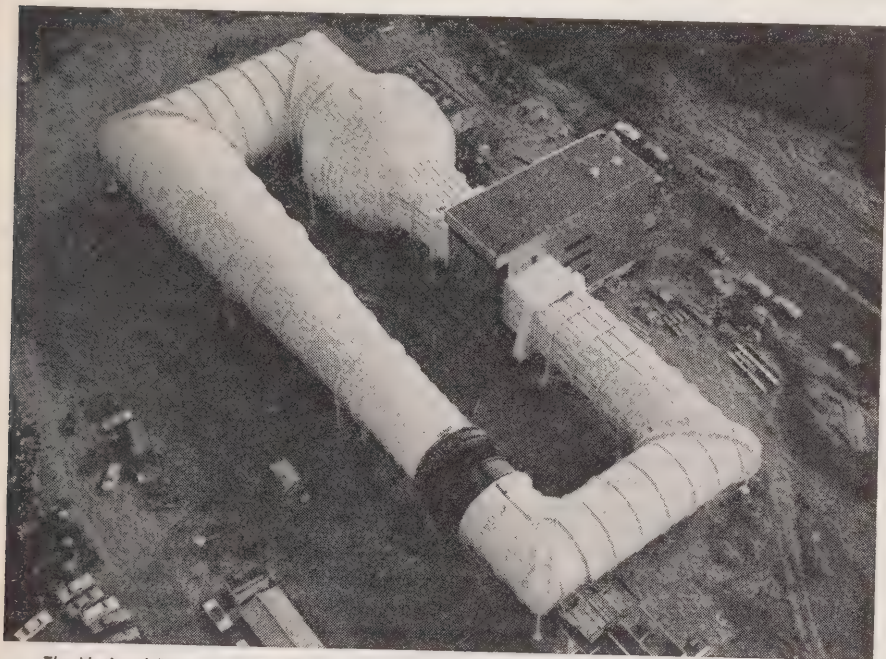
Since many of the Division's facilities are not duplicated elsewhere in Canada, the Division assists manufacturers with the testing of a great variety of products.

National Aeronautical Establishment.—The National Aeronautical Establishment conducts aeronautical research to meet the needs of military and civil aviation, working in co-operation with the Canadian aircraft industry; it also carries out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics. It has the only development wind tunnel facilities in Canada and is thus equipped to handle most of the industrial or military aircraft developments of the foreseeable future. Aerodynamics research from low speeds up to about 17 times the speed of sound is carried out in the wind tunnels; considerable attention is being given at present to low-speed problems of vertical and short-take-off aircraft. Other studies include work on the aerodynamic characteristics of high-thrust propellers, on wings with submerged fans and on wings immersed in powerful slip-streams. The research on structures and materials involves investigation of aircraft accidents, the theory of structures, fatigue and fracture, flight loads statistics and aircraft hydraulics. The flight mechanics program covers research on flight safety and flying stability and control, the development of a crash position indicator for locating crashed aircraft, atmospheric physics and anti-submarine magnetometry.

A growing and highly diversified program of assistance to smaller industries is developing, the work relating mainly to product development, product improvement or testing. Concerning aircraft utilization, efforts have been directed toward those areas of national activity where aerial methods might offer economies in cost or improvements in effectiveness, such as agricultural applications, forest fire fighting, aerial logging, high sensitivity magnetic surveys, precipitation physics, and studies of atmospheric turbulence.

Radio and Electrical Engineering.—This Division conducts engineering projects of interest to Canadian industry and fundamental research in electrical science. The engineering program in the high-voltage field includes studies of corona loss and radio interference from direct-current transmission lines, and the development of current comparators for very accurate measurement of current and voltage ratios. The Division gives assistance to Canadian industry in the design, production and evaluation of new equipment, and in the solution of such engineering problems as the design of antennas, microwave film and paper dryers, and electronic aids to navigation, including a radar for operation in narrow waterways.

A recently developed radar altimeter, to be used in taking inventory of forests by photogrammetry, has now been adapted, at the request of the Food and Agriculture Organization of the United Nations, for use in tropical rain forests. In the field of bio-

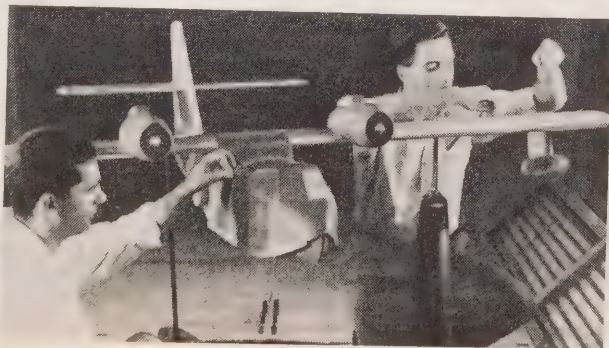


The National Research Council's new wind tunnel at Uplands Airport, Ottawa, as it neared completion in early 1969. It will be used by the Canadian aircraft industry and NRC for research and development of all types of aircraft as well as for other structural and mechanical testing.

medical engineering, new techniques in electrocardiography that have been successfully tested in clinical practice will allow reliable monitoring of a fetal heartbeat. The Division has co-operated with members of the medical profession in the establishment of safety standards in the use of electronic treatment and diagnostic equipment in hospitals.

With the increasing use of computers in all branches of science the work of the Division has become increasingly concerned with the development of computer techniques and their many applications. In one such project the problem of communication between man and machine is studied, and in another the application of computers to education is being investigated. A computer-aided teaching system has been developed, the usefulness of which is being tested by a course unit set up for beginning geography students.

Model of C1-215, designed primarily for water bombing of forest fires, undergoing wind-tunnel tests. The structure has a working section for testing model aircraft with wing spans of up to 20 feet.



The Algonquin Radio Observatory operated by the Division has facilities that include a multi-element interferometer used for solar observations, and a 150-foot parabolic radio telescope. Since its completion in 1966, astronomical measurements have been made with this telescope with a degree of accuracy not previously attainable, and many observation programs have been initiated at the observatory, not only by National Research Council scientists but by astronomers from Canadian and foreign universities.

Fundamental studies are also carried out in the fields of upper atmosphere research, wave propagation, solid state physics and the behaviour of particles at ultra-high vacuum.

Space Research Facilities.—The function of the Space Research Facilities Branch of the National Research Council is to develop and provide facilities to meet the needs of the upper atmosphere and space research programs of Canadian scientists in universities and government agencies (see pp. 404-407). At present its work is restricted primarily to the use of sounding rockets. The Churchill Research Range which is operated for the benefit of Canadian and American scientists and has a joint Canadian-American funding is the major launching facility. It has capabilities for launching many kinds of sounding rockets and balloons carrying scientific experiments to investigate the earth's upper atmosphere and also associated ground-based instruments to study the aurora borealis by photographic and spectro-photometric methods. The Branch maintains, for occasional use, a small launching facility at Resolute Bay in the Northwest Territories and temporary launching facilities will be set up at other locations in Canada to be used for specific studies associated with the eclipses of the sun in 1970 and 1972. The Branch operates a satellite tracking and data reception station near St. John's in Newfoundland and the Great Whale Geophysical Station at Poste de la Baleine in Quebec.

The implementing of the sounding rocket program, for which the Branch is generally responsible, includes the provision of the vehicles and the incorporating of the scientific experiments into suitable payloads, with associated telemetry and other devices, most of which work is carried out by industrial contracts. Branch work also includes the reduction of flight data to provide vehicle trajectory and attitude information to experimenters and the provision, from the telemetered information recorded on magnetic tape, of data required by individual scientists in any form desired.

Atlantic Regional Laboratory.—The Atlantic Regional Laboratory is engaged in practical and fundamental studies in chemistry and biology, which are related to the resources and industries of the Atlantic Provinces. Such studies include investigations of: the biochemistry and physiology of marine algae, fungi, bacteria, lichens, mosses and higher plants; the chemistry of naturally occurring organic compounds; and the physical chemistry of inorganic compounds at high temperatures. A major objective is to develop varieties of seaweeds with enhanced commercial value and to investigate the growth and cultivation of seaweeds and other marine algae. Surveys are being made to reveal new sources of seaweeds. An applied project on toxic microfungi in pastures is being carried out in collaboration with the Canada Department of Agriculture at Nappan, N.S. Fundamental studies on inorganic reactions at high temperatures are expected to give information of value to the steel and glass industries. Research in organic reactions includes work on methods of synthesis which may eventually have industrial value. Some of the work in biochemistry and physiology is related to medicinally important compounds such as antibiotics and drugs that affect mental processes.

Prairie Regional Laboratory.—One of the aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs. The Laboratory program is carried out by five sections: physiology and biochemistry of fungi, physiology and biochemistry of bacteria, plant biochemistry, chemistry of natural products, and engineering and process development. Research is therefore carried out on the properties and reactions of plant components, and on the biological,

chemical and engineering processes for turning them into other compounds. The development of oil-seed crops as alternatives to seed crops has received considerable attention.

For some time, the Laboratory has studied major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is also being given to minor plant constituents, such as phenols, flavonoids and terpenes, which are known to have fungicidal and germicidal properties. A laboratory has been set up for the systematic study of extractives from local plants and shrubs.

Developments from the Laboratory attracting commercial interest are: the production of feed supplements by direct use of microorganisms, and specific essential amino acids such as lysine; poly-hydroxy alcohols such as glycerol and arabitol; hydroxy fatty acids; and the possibilities of producing specific glyceride types using the enzyme systems of microorganisms. The Laboratory works in co-operation with the Canada Department of Agriculture to help maintain Canada's position as the world's leading exporter of rapeseed, used to produce cooking oils, dressings and oil for use in margarine and shortening. A group working in the field of mycology is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

Subsection 3.—Research in the Atomic Energy Field*

Recent Developments and Prospects.—Over the past few years a major change of outlook has come about in the atomic energy field that confirms and strengthens the Canadian research and development program. Previously, the major objective was to develop nuclear electric generating stations that would compete with stations burning coal or oil, an objective met when The Hydro-Electric Power Commission of Ontario (Ontario Hydro) undertook to construct the large nuclear station at Pickering near Toronto. This came in parallel with the decisions of many utilities in the United States to build nuclear stations that promise similarly to be economically competitive. The new outlook is the recognition that nuclear power costs can be made much lower if on a large scale, and that it will become economic to use such low-cost power to desalt water, to produce fertilizer and to change other industrial chemical and metallurgical processes. Canada's line of heavy water reactors modified to use both thorium and uranium fuel together continue to hold outstanding promise for the new objective in comparison with all others.

Ontario Hydro has announced its decision to construct another nuclear station for 3,000 megawatts (one megawatt = 1,000 kilowatts) comprising four units of 750 megawatts each, in addition to completing the station at Pickering with its four units of 500 megawatts each, scheduled to go into service in the period 1971-73. Power from the Pickering station is estimated to cost less than 4 mills (0.4 cents) per kilowatt hour.

The Quebec Hydro-Electric Commission (Hydro-Québec) has also entered the nuclear field with a 250-megawatt prototype nuclear generating station of advanced design which will make it the first of its kind in the world. The station (named Gentilly) is being built near Bécancour, Que., and is to be commissioned in 1971. Like the earlier CANDU (Canadian Deuterium Uranium) reactors, the design employs natural uranium as the fuel and heavy water as the moderator, but the heat will be carried from the fuel by boiling ordinary water instead of by heavy water at a pressure sufficient to prevent boiling. The design is distinguished by the title CANDU-BLW-250 (Canadian Deuterium Uranium-Boiling Light Water-250 megawatts).

The first nuclear power demonstration (NPD) reactor, CANDU-PHW-20 (Pressurized Heavy Water-20 megawatts) at Rolphton, Ont., has continued to show that capacity factors well in excess of 80 p.c. throughout a full year can be achieved with this

* Prepared (September 1968) by Dr. W. B. Lewis, Senior Vice-President, Science, Atomic Energy of Canada Limited, Chalk River, Ont.

type of system. Indeed, the station, the capacity of which has been raised to 23 megawatts following modifications to the turbine, achieved a capacity factor of 99.96 p.c. during the winter of 1967-68. Fuel-changing occurs routinely with the reactor at power.

With the successful commissioning of the next reactor in the series, the 200-megawatt station at Douglas Point, Ont., the role of NPD changed and the Douglas Point station has assumed the power-demonstration function. NPD will henceforward find increasing use as an experimental facility. Work continues on the long-term behaviour of reactor materials and the reactor is being converted to the boiling mode of operation of the heavy water coolant. The station will, however, continue to supply electric power to the grid and to act as a training base for those who will staff the larger reactors now being built in Canada and abroad.

Canadian heavy water power reactors are also under construction in India and Pakistan. To meet the large demand for heavy water that these reactors will necessarily create, a plant to produce 400 tons a year is under construction at Glace Bay, N.S., and another plant of equal capacity is under construction at Port Hawkesbury, N.S. When both plants are producing to their rated capacity, Canada will be the world's leading producer of heavy water, but further capacity will be needed.

Nuclear power is expected to restore the world market for uranium, with the major build-up occurring in the 1970s. The high energy yield from the fission of uranium is the key to economic nuclear power. The yield is so high that the cost of the raw uranium is a very minor component of the cost of electric power. It is about 5 p.c. of the total and may be contrasted with 50 p.c. or more paid for coal in some large conventional generating stations. The largest component in the over-all economy of nuclear power systems is reactor plant construction and a minor (7 p.c. to 12 p.c.) component is fuel fabrication.

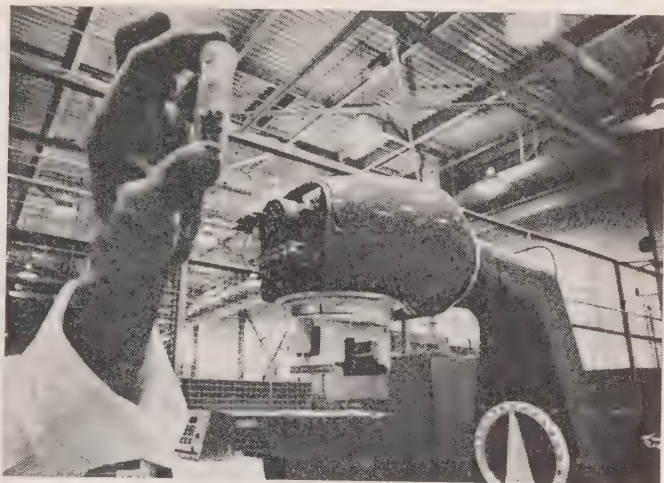
In the past, the major atomic energy activity in Canada was uranium mining and refining for export in support of military uses. Circumstances have changed so greatly that the Federal Government is following a policy of no further exports for nuclear weapons but is encouraging export for peaceful purposes such as nuclear power subject to negotiated safeguards. It is also significant that, since lower unit power costs result from larger stations, there is a new incentive for large utilities to export power from their systems and to interconnect centres of load by high-voltage transmission even over long distances.

The first commercial food irradiator using Cobalt-60 radiation is in operation near Montreal, Que. Canada supplied and installed Europe's largest medical products sterilization plant in West Germany and designs are in hand for the world's first in-hospital unit to be installed in a new hospital in London, Ont.

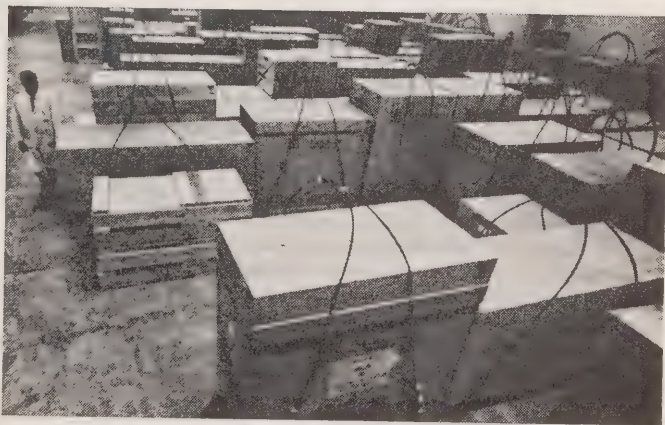
A major advance in instrumentation, precision gamma-ray spectrometry, based on specially prepared germanium crystals pioneered at Chalk River, is revolutionizing many techniques, particularly isotope and element analyses by radioactivation by neutrons.

Organizational Arrangements.—Three Federal Government organizations have the basic responsibilities for atomic energy in Canada: (1) the Atomic Energy Control Board (AECB), responsible for all regulatory matters concerning work in the nuclear field; (2) Eldorado Nuclear Limited (ENL) (previously the Eldorado Mining and Refining Limited) with a double function as a producer of uranium and as the Government's agent for the purchase of uranium from private mining companies; and (3) Atomic Energy of Canada Limited (AECL), concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as Cobalt-60 beam therapy units for the treatment of cancer, and large installations for the sterilization of medical supplies and other uses. In addition to these agencies, the Radiation Protection Division of the Department of National Health and Welfare (see p. 277) plays an increasing role in ensuring the safe use of radioisotopes and X-rays as well as monitoring radioactivity in public water supplies and the environment from all sources.

A small vial of cobalt, when "cooked" in an intense field of neutrons, becomes Cobalt-60 which, when placed in the head of the Theratron-60 therapy unit in the background, destroys cancerous tissue by radiation.



Radio therapy units ready for shipment at the South March plant of Atomic Energy of Canada Limited. More than 600 units have been sold in 48 countries—well over half the cancer radiation equipment used around the world.



AECL does not itself conduct research but it gives substantial grants to universities to further independent studies and to provide the equipment without which the universities would find it difficult to train the nuclear research workers of tomorrow; in 1966-67 they totalled \$2,500,000. The National Research Council also has made grants in the atomic energy field.

ENL operates research and development laboratories in Ottawa and uses them to support its uranium mining and processing at Beaverlodge in northern Saskatchewan and its refining plant at Port Hope, Ont. ENL co-operates with the Department of Energy, Mines and Resources, which carries out background research on the production and use of uranium.

AECL has an 11-man Board of Directors, including individuals from power companies, private industry and the universities. The company's major establishment, the Chalk River Nuclear Laboratories, is near Chalk River in Ontario, and a second laboratory, the Whiteshell Nuclear Research Establishment, is near Pinawa in Manitoba. The company's Head Office and AECL Commercial Products are in Ottawa. AECL Power

Projects, located at Sheridan Park near Toronto (see p. 381), direct the engineering of power reactors and nuclear generating stations and operate as consulting nuclear engineers. Acting on a proposal by Canadian General Electric Company Limited, AECL agreed to the merger of CGE's nuclear power system design and engineering group with that of AECL Power Projects. Effective in July 1968, the agreement extends over a period of five years with appropriate arrangements for cancellation.

The design and construction of NPD, the demonstration plant, was carried out by collaboration between AECL, the Canadian General Electric Company Limited and Ontario Hydro. AECL Power Projects, with the assistance of Ontario Hydro, designed and constructed the Douglas Point station, which plant, by agreement, will be purchased by Ontario Hydro when it is in satisfactory operation. A similar arrangement between AECL and Hydro-Quebec is being used for the construction of the CANDU-BLW-250 station. The large units of the Pickering station are being built by Ontario Hydro using AECL Power Projects as consulting nuclear engineers.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. For example, the Canadian General Electric Company designed and constructed WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment on a fixed-price negotiated contract. The CGE and Canadian Westinghouse companies are established in the field of fuel element fabrication, and other work related to Canada's nuclear power program is carried out in collaboration with Orenda Limited, Dilworth, Secord, Meagher and Associates, Bristol Aero Space Limited, Montreal Engineering Company Limited, Shawinigan Engineering, Surveyor, Nenniger and Chenevert and others. The last three organizations named have formed a consortium, under the title Canatom, for the purpose of providing consulting engineering services in association with AECL in bids for foreign nuclear power reactor business.

In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the opportunity arises, leaving AECL free for fundamental studies and developing new reactor concepts. For some years AECL expects to continue a consulting engineering role in the design of nuclear generating stations. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

To support their activities in this field, both industry and universities need ready access to information. This was one reason why industry set up the Canadian Nuclear Association, a body that has held a highly successful series of annual conferences at which both progress and the prospects for the future are reviewed. Detailed technical information is available principally from the library of the Chalk River Nuclear Laboratories, which lends about 725 items a month from its comprehensive collection of the world's nuclear literature. Information is also distributed from extensive depository collections at the libraries of the University of British Columbia, McMaster University, the National Research Council and from seven smaller collections located across Canada.

In the international field, close ties are kept with the United States Atomic Energy Commission (USAEC) and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. There is an agreement with the United States for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the United States to undertake research and development related to reactors of Canadian design. Collaboration has also been established with the International Atomic Energy Agency, the Organization for

Economic Co-operation and Development, and Euratom, as well as with Australia, West Germany, India, Italy, Japan, Pakistan, Spain, Sweden, Switzerland, the Soviet Union and, less formally, with Denmark, France and Norway.

In India a major experimental reactor—the Canada-India Reactor—similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961. Two 200-megawatt units similar to that at Douglas Point are being constructed in India on a co-operative basis, known as the Rajasthan Atomic Power Project (RAPP). India has announced plans to install two more units on another site near Madras. A 125-megawatt station for the Karachi area is under construction by the Canadian General Electric Company on contract from the Government of Pakistan.

Research and Research Facilities.—At the Chalk River Nuclear Laboratories, basic and applied research is carried on by about 300 professional scientists and engineers supported by 350 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, reactor fuels, radiation chemistry, materials science, environmental radioactivity, physics of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, a new tandem Van der Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, electron microscopes, multi-channel pulse analysers, automatic recorders, and analogue and digital electronic computers.

Basic research is carried on in many fields, especially that of the structure of atomic nuclei and of the interactions of neutrons, not only with individual nuclei but also with liquids and crystalline solids, particularly those involving energy transfer. For nuclear structure studies, an earlier tandem Van der Graaff made pioneer work possible by providing multiply charged ions of precisely known energy and direction. It has proved possible to produce nuclei in specific energy states by different routes and to identify and analyse the states, thereby deducing the spin and other characteristics and discovering, for example, three correlated series of rotational states in the nucleus neon-20. Not only is this important to a basic understanding of nuclear structure but it also finds application in unravelling the complex of nuclear reactions responsible for the genesis of nuclei in the interior of stars. With the new tandem Van der Graaff rated at 10,000,000 volts on the terminal replacing the former machine that attained 7,000,000 volts, it is possible to study reactions between heavier and more complex nuclei.

Studies of neutron interactions with matter are made possible by the intense beams of neutrons available from the NRU reactor. By monitoring the neutrons in cosmic radiation, it has been possible to find correlations with the occurrence of solar flares and contribute to the recent advances of knowledge of phenomena in interplanetary space. Isotope techniques have brought about revisions in the basic theory of chemical reactions induced by radiation. This basic research is finding a useful application in the technology of various coolants in nuclear power reactors.

The research facilities of the NRX and NRU reactors have continued to attract individual scientists as well as teams from universities and from other countries. More facilities for studying radiation damage and its effects under closely controlled conditions have come into use. These include devices for measuring creep of metals under stress and fast neutron bombardment at controlled temperatures.

The growing use of lithium-drifted germanium detectors for precise measurements of gamma-ray energies has led also to more extensive electronic digital data-processing. For this and other reasons, the main computing facility will be augmented with new equipment.

The first major installation at the Whiteshell Nuclear Research Establishment (WNRE) is the organic liquid-cooled heavy-water-moderated experimental reactor WR-1. With the high coolant temperature of 345 °C, this reactor has achieved a remarkable record of operation and zirconium alloys are proving quite adequate to contain the coolant. The facilities of WR-1 are quite extensive and can be applied to development work also with other coolants such as boiling water and superheated steam. Laboratory facilities at

WNRE are specially suited to studies of the effects of radiation on materials and a wide program from molecular biology to radiation chemistry and reactor engineering is developing.

Atomic energy or nuclear science is spreading out into so many fields of technology and daily life that the boundaries are becoming diffuse. For the purposes of this review, the field is restricted to all those activities that are conducted only under an order from the Atomic Energy Control Board. This field includes all uses of radioisotopes, including natural uranium and thorium, at significant levels of activity and the operation of all machines capable of producing such isotopes and highly penetrating radiations.

Radioisotopes are widely used in medical research and diagnostics including forensic studies and in biological research in universities, hospitals, research institutes and field stations. They are also used in well-logging and in analyses of geological and mineral samples.

The radiations from isotopes, especially Cobalt-60, are used for sterilization of packaged and sealed medical supplies, for cancer therapy and for food sterilization. Since the Cobalt-60 radiations are not capable of producing neutrons or secondary radioactivity, the products from these operations require no subsequent radiation control and therefore lie outside the atomic energy field. The irradiators themselves are controlled by the AECB.

Multi-million volt particle accelerators are capable of and sometimes used for producing radioisotopes at high activity levels, so both the machines and the products come under AECB regulation. Several new accelerators have been introduced recently in university research laboratories. There are electron linear accelerators at the Universities of Saskatchewan and Toronto. The Université de Montréal has taken over the Tandem accelerator from Chalk River and a similar machine has been installed at McMaster University. Of the older accelerators, the cyclotron at McGill University in recent years has been used extensively for nuclear physics and nuclear chemistry and among the results obtained was the discovery of several nuclei that emit protons in their radioactive decay. The nuclear reactor at McMaster is used extensively in a wide range of research and for graduate training in nuclear physics.

Nuclear Power Development.—Much of the success of the CANDU series of reactors is attributable to the engineered design of the fuel tested in many experimental irradiations under conditions that are more exacting than normal service. The fuel is uranium dioxide, specially prepared from natural uranium entirely in Canada. Strings of pellets of sintered oxide are charged into thin-walled zirconium alloy tubes. The tubes deform slightly in service in a determined manner that has proved satisfactory. The migration of the fission product atoms, especially the gases, has been studied extensively and satisfactory operating conditions have been established for the full energy yield of 9,000 megawatt-days per ton of uranium and more.

This energy yield is so great that there is no need to make provision for processing the spent fuel and the prospective fuelling cost is 0.7 mill (0.07 cent) per kilowatt hour of electricity. This cost may be compared with about three mills from coal at \$8 per ton. The low fuelling cost is most important because Canada has access to such an abundance of coal, oil and natural gas that the competitive cost-level for thermal power is lower than in many other countries.

An evaluation was presented at the third United Nations Conference on the Peaceful Uses of Atomic Energy held at Geneva in September 1964 of cost estimates of several preliminary designs of large power reactors using heavy water as moderator. These designs represented types for which development work was well advanced. The differences lie in the choice of heat transfer fluid or 'coolant' and the steam cycle. Basically, there are three coolants—heavy water, ordinary or light water, and an organic liquid.

The heavy water could be under pressure to prevent boiling or to allow some boiling. Light water would have to boil or be in the form of 'fog' or 'wet steam'. The organic liquid

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR UNDER DESIGN

Name	Location	Date of Start-up	Power	Fuel	Moderator	Coolant	Use
Zero Energy Experimental Pile (ZEEP).....	Chalk River, Ont.	1945	100 w.	Natural uranium metal or oxide	Heavy water	—	Lattice experiments
National Research Experimental (NRX) ¹	Chalk River, Ont.	1947	42,000 kw.	Natural uranium oxide and enriched uranium alloy	Heavy water	Ordinary water	Research, engineering tests and isotope production
National Research Universal (NRU).....	Chalk River, Ont.	1957	90,000 kw. to 120,000 kw.	Enriched uranium alloy	Heavy water	Heavy water	Research, engineering tests and isotope production
Pool Test Reactor (PTR).....	Chalk River, Ont.	1957	100 w.	Enriched uranium alloy	Ordinary water	Ordinary water	Reactivity and absorption measurements
Toronto University Sub-critical Reactor.....	Toronto, Ont.	1958	—	Natural uranium metal	Heavy water	—	Research and teaching
McMaster Nuclear Reactor (MNR).....	Hamilton, Ont.	1959	2,000 kw.	Enriched uranium metal	Ordinary water	Ordinary water	Research
ZED-2.....	Chalk River, Ont.	1960	100 w.	Natural uranium metal oxide or carbide	Heavy water	—	Lattice experiments
Nuclear Power Demonstration (NPD).....	Rolphton, Ont.	1962	20,000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power demonstration
Whitshell Reactor No. 1 (WR-1).....	Pinawa, Man.	1965	40,000 kw. at first	Enriched uranium oxide	Heavy water	Organic liquid	Research and engineering tests
CANDU-PHW-200 ²	Douglas Point, Ont.	1966	200,000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power
Karsachi Nuclear Power Plant (KANUPP).....	Karachi, Pakistan	1970	137,000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power
CANDU-PHW-500 (total of 4 reactors).....	Pickering, Ont.	1970	500,000 kw. (electricity) each	Natural uranium oxide	Heavy water	Heavy water	Power
CANDU-BLW-250.....	Gentilly, Que.	1971 proposed	250,000 kw. (electricity)	Natural uranium oxide	Heavy water	Ordinary water boiling	Power

¹ NRX is essentially duplicated in the Canada-India Reactor, near Bombay, India, which started up in 1960.

² The CANDU-PHW-200 design is also employed in the Rajasthan Atomic Power Plant in India, where the first reactor is scheduled to start up in 1968.

³ CANDU-PHW stands for "Canadian Deuterium Atomic Power Plant in India, where the first reactor is

may simmer but not boil. All types have excellent economic promise and it was decided to develop the boiling light-water type chiefly for two reasons. By taking the steam direct to the turbine, a boiler or heat-exchanger is eliminated and the efficiency is raised. The second advantage is a relaxation of the strictness of control of leaks needed with hot heavy water, both because of its cost and because of the toxicity of the tritium it contains.

The low fuelling cost derives as much from the details of the designs proposed as from the choice of heavy water as the moderator. Extensive development has been applied to reduce the fabrication cost of the fuel; a recent \$9,000,000 order at a price including the uranium and zirconium of \$44 per kilogram of uranium fulfils the predicted estimates while leaving still further promise of lowering the cost as the scale of production increases.

Particular attention is paid in reactor design to minimize the wastage of neutrons by reducing the amount of absorbing structural material. For example, in the NPD reactor the tubes forming the fuel channels have 3.25 inches inside diameter and walls 0.163 inch thick, whereas the four-inch diameter tubes in the Gentilly reactor will be of an improved zirconium alloy and only 0.095 inch thick. The capital cost per kilowatt is also being reduced by building reactors and turbines of larger capacity, by simplification and repetition of designs as well as by increased fuel ratings. The cost of heavy water is also falling as modern plants of large capacity come into production.

Most of the development work centres on establishing the properties of materials for the arduous environment of high temperatures, and radiation effects affecting the solids and the fluids. In ordinary engineering, the three parameters of stress, temperature and time lead to complex analyses, especially when corrosion and atomic diffusion are active. In reactors, irradiation is a fourth and major parameter. Thus, materials development still calls for a major scientific and engineering program of studies.

Subsection 4.—Space Research in Canada*

The interests of Canadian scientists engaged in space research continue to be mainly in the field of aeronomy with particular, though not exclusive, emphasis on the high-latitude atmospheric and magnetospheric phenomena which are now generally believed to be related to the various disturbances on the sun. Canada, with its large land mass extending on both sides of the auroral zone, is ideally located for studies of medium- and high-latitude atmospheric phenomena and Canadian scientists have long been active in this exciting field. Although many of the programs of ground-based observations are still of great importance and are continuing, measurements from rockets and satellites are now making a significant contribution to knowledge of the upper atmosphere and solar-terrestrial relations.

The satellite program of the Defence Research Board carried on in collaboration with the United States National Aeronautics and Space Administration (NASA), continues to form a major part of the Canadian space activities. The Canadian satellite *Alouette I*, which was launched on Sept. 29, 1962, is still in orbit. Its instruments are functioning satisfactorily and there is every indication that it will continue to operate and send back scientific data for some time to come. This satellite carries a number of experiments but its main objective is the sounding of the ionosphere from above. The ionosphere is the diffuse layer of highly conducting gas lying between heights of about 60 to 300 miles. It reflects radio waves over a wide band of frequencies and is of great practical importance for communications. The underside of the ionosphere has been studied for many years by the technique of sending a short pulse of radio waves up from the ground and examining this pulse after it had been reflected back from the ionized regions. *Alouette*, however, was the first spacecraft to provide scientists with a continuous sounding of the ionosphere from above. This spacecraft is now the oldest operating satellite that continues to transmit data.

Other instruments carried by the satellite enable studies to be made of radio waves from outer space and very low frequency electromagnetic waves whose propagation is

* Prepared (September 1968) in the Space Research Facilities Branch, National Research Council, Ottawa.

influenced by the earth's magnetic field. There are also a number of detectors to study cosmic rays, energetic particles in the Van Allen radiation belts and the artificial radiation introduced by high-altitude nuclear explosions. Data are transmitted from the satellite to the ground stations in several countries around the world and the magnetic tape records are sent to Ottawa for analysis. Scientific results to date have been most gratifying and the satellite measurements have added greatly to knowledge of the earth's upper atmosphere.

The over-all design and construction of the spacecraft were carried out by the Defence Research Telecommunications Establishment. Some components were made by Canadian industry and the cosmic ray instruments were the responsibility of the National Research Council. The cost of the launching vehicle, the actual launching and much of the data recovery were undertaken by NASA as part of its international co-operative program. This joint Canadian-United States program is continuing. On Nov. 29, 1965, the second Canadian satellite *Alouette II* was successfully launched by NASA from the Western Test Range in California, carrying instruments similar to but more sophisticated than those of *Alouette I*. Its elliptical near-polar orbit has an apogee of 3,000 km., allowing measure-

Telemetry receiving antennae in use at the Churchill Research Range. Because these sensitive devices are highly directional, the operators must track the course of the rocket's payload in flight, working from "look" angles received prior to launch.



A sounding rocket is prepared for launching at the Churchill Research Range under the watchful scrutiny of Base technicians and NRC scientists.



ments to be made over a much greater height range than previously. *Alouette II* is the first of four satellites to be built in Canada for the International Satellites for Ionospheric Studies (ISIS) series. ISIS "A" is scheduled for launching in January 1969 and "B" and "C" will follow at about two-year intervals.

The National Research Council has been responsible for the management of the Churchill Research Range in northern Manitoba since Jan. 1, 1966, under an arrangement formalized by a Canadian-United States governmental agreement providing for joint funding and use of the range and designating NRC and NASA as the responsible Canadian and American agencies. Operations at the range are carried out by a civilian contractor. At present about 70 large sounding rockets are launched each year together with about 200 small meteorological rockets.

Rockets have a special role in the space programs because there is an important region of the upper atmosphere that is too low for satellite orbits and too high to be reached by balloons or aircraft. In this region between heights of about 25 to 200 miles are found the absorbing layers in the lower ionosphere that cause radio blackouts and the complex atmospheric processes that produce the visible aurora. Because the axis of the earth's magnetic field is tilted, the auroral zone sweeps down across Canada, and Churchill lies almost in the middle of this zone. This region of the atmosphere is therefore of great interest and importance to Canadian scientists. For many years investigations were limited to ground-based radio and optical measurements but now rockets are being used to carry instruments right into the aurora. The measurement *in situ* of electron density, temperature and charged particles will ultimately lead to a proper understanding of the aurora and high-latitude disturbances.

Another zone of particular scientific interest is that in the vicinity of the magnetic dip pole. Because its geographic location at the present time is well outside the cover of the Van Allen radiation belts, which terminate in the auroral zones, the magnetic polar region is particularly suitable for the study of radiation from outer space. In 1966, two *Black Brant III* rockets carrying instrumentation for the measurements of galactic X-rays were launched from a quickly prepared site at Resolute Bay, N.W.T. The operation was very successful and the results were of considerable scientific interest. In 1967 the installation was improved and expanded to cater for meteorological rockets, and two more *Black Brant III* vehicles, carrying similar experiments as in 1966, were launched. On this occasion, United States scientists participated in the Resolute launchings by firing two boosted ARCAS rockets. Launches are planned for late 1968 for the NRC, the University of Calgary, NASA and the Meteorological Branch of the Department of Transport.

Many of the rockets fired at Churchill are of Canadian design and development; the *Black Brant* rockets were pioneered by the Defence Research Board and are now produced commercially in Winnipeg. *Black Brant IIA* is a 17-inch diameter vehicle capable of carrying 150 lb. of payload to over 100 miles. *Black Brant III*, 10 inches in diameter, will lift 40 lb. to about 100 miles. *Black Brant IV* is a two-stage rocket, combining the *IIA* and *III*, and will go to a height of about 600 miles. *Black Brant VA* and *VB* are both 17-inch vehicles, the former with the same motor as the *IIA* but with a rather higher performance, and the latter with a motor giving slightly less thrust for double the time, which results in an ability to carry 250 lb. of payload to over 240 miles. Contractors employed under contract by the Space Research Facilities Branch of the National Research Council in the instrumentation of rockets and the integration of the payloads include Bristol Aerospace Limited, the Space Engineering Division of the University of Saskatchewan and the Institute of Aeronautical Studies of the University of Toronto.

Along with the increased activity in Canadian space programs there has been a general broadening of interests. The Meteorological Branch of the Department of Transport (DOT) Meteorological Satellite Data Laboratory is applying satellite observations to the problems of meteorology and ice reconnaissance. Two experimental ground stations for the development and use of meteorological satellite systems have been completed at Halifax

and Toronto. In the field of communications satellites, DOT has a joint program with NASA in which Canada participates in the testing of satellites in the Applications Technology Satellite (ATS) Program using the experimental communications satellite ground stations at Mill Village, N.S.

Canadian universities continue to be very active in the field of space research. Nine university groups have programs involving the instrumenting of rockets, balloons or satellites for upper atmospheric studies.

Much of the foregoing work is shared with Canadian industry. Civilian contractors are producing instruments and space vehicles for both Canadian and foreign experimenters. In some programs, such as the *Alouette* satellite and the development of *Black Brant* rockets, industry is playing a major role. Other work of great importance for the space programs, such as fundamental research on materials and in plasma physics, is also being carried on in industrial laboratories.

In 1966 a special study was commissioned by the Science Secretariat of the Federal Government to review the existing Canadian programs in space science, to determine the reasons for a space program in Canada, to forecast future programs and to outline the elements of a suitable organization. This study, known as the Chapman Report, was published in March 1967 and led to the formation in July 1967 of a Task Force on Satellites which has now made recommendations to the Government on the scope and nature of Canada's future activities in the use of satellites, including satellite communications, and avenues for co-operation with United States, European and other interests in this field.

Subsection 5.—Research in Geophysics and Astronomy

Research in the field of geophysics is covered in the 1967 Year Book under the heading of Geology and Economic Minerals of Canada, pp. 30-32. The following item on this subject gives brief additional data on current (1967-68) projects and facilities. A special article on Astronomy in Canada, appearing in the 1965 Year Book at pp. 47-55, indicates in some detail the advances made in astronomical research and educational facilities; the write-up on pp. 408-409 mentions the highlights only.

Geophysics.*—Geophysics—the study of the earth, including the oceans and atmosphere, by the methods of physics—embraces a number of fields, each a major science in itself, such as geodesy, seismology, terrestrial magnetism, meteorology, oceanography and hydrology. Work in geophysics in Canada is carried on by a number of Federal Government departments, some provincial governments, nearly all universities and by companies engaged in geophysical prospecting for oil or minerals.

Currently, in the field of seismology, the 25 first-order seismograph stations and four subsidiary stations operated by the Dominion Observatory, with the co-operation of universities in several cases, provide good coverage of the country for the recording of earthquakes. The regular stations are supplemented by a special array of detectors at Yellowknife, N.W.T., operated by the Dominion Observatory as part of a world network of highly sensitive detection stations for nuclear explosions. Also, a temporary network has been established in British Columbia in the vicinity of the Bennett Dam on the Peace River to investigate the possible effect of man-made lakes on the crust. At the Dominion Astrophysical Observatory in Victoria, B.C., a study of earthquake probabilities in Canada has been made to assist in devising building codes. Considerable work has also been done by both government and university groups on the study of the earth's crust, using waves from explosions.

Measurements of both the gravitational and magnetic fields of the earth were extended during 1967-68 over land areas by the Dominion Observatory and the Geological Survey, and over the oceans by the Bedford Institute of Oceanography. These measurements

* Prepared by Dr. G. D. Garland, Geophysics Laboratory, University of Toronto, Toronto.

provide information that is extremely useful in the study of concealed geological structures. A very large area of Canada has now been covered by airborne magnetometer maps (partly through co-operative federal-provincial surveys); in many regions, these maps have come to be an essential item of equipment for the prospector. The Geological Survey has published a magnetic map of Canada and the Dominion Observatory has issued a gravity map. These compilations indicate that certain large-scale features may be traced geophysically for very long distances. Because the north magnetic pole is located in Canada, studies of magnetic disturbances and their relation to conditions in the upper atmosphere are of importance in Canadian geophysical research. Observations by means of rockets were made at the Churchill Research Range in northern Manitoba and also with rockets fired from Resolute Bay, N.W.T. Some university groups have conducted research with instruments carried by high-altitude balloons. Satellite *Alouette I* launched in 1962 and *Alouette II* launched in 1965 continue to provide information on the ionosphere and instrumentation is being prepared for a new series of satellites for ionospheric studies (see pp. 404-407).

The Canadian program for the International Hydrological Decade, a ten-year study of the world's freshwater resources, has been developed in detail. Experimental basins across the country have been selected for the observation of the effects of changes in surface features on the amount and quality of groundwater. Canadian groups will participate in an intensive study of the waters of the Great Lakes, to be known as the International Field Year on the Great Lakes (beginning April 1970). A feature of the Canadian program in hydrology is the importance of glacier studies. During the year, expeditions to over 20 glaciers in the Arctic or Cordillera were carried out by Canadian or other groups. Glaciological research included studies of the causes of sudden glacial surges, and also test of radar methods of measuring ice thickness.

Meteorology includes not only the routine forecasting carried out principally by the Meteorological Branch of the Department of Transport (see p. 48) but also research in special problems by the Branch and by at least 12 university groups. These problems include controlled experiments in weather modification, the mechanics of hail formation, the use of computers to study and predict large-scale motions of the atmosphere, and micro-meteorology, which is the detailed investigation of meteorological conditions in regions of small extent.

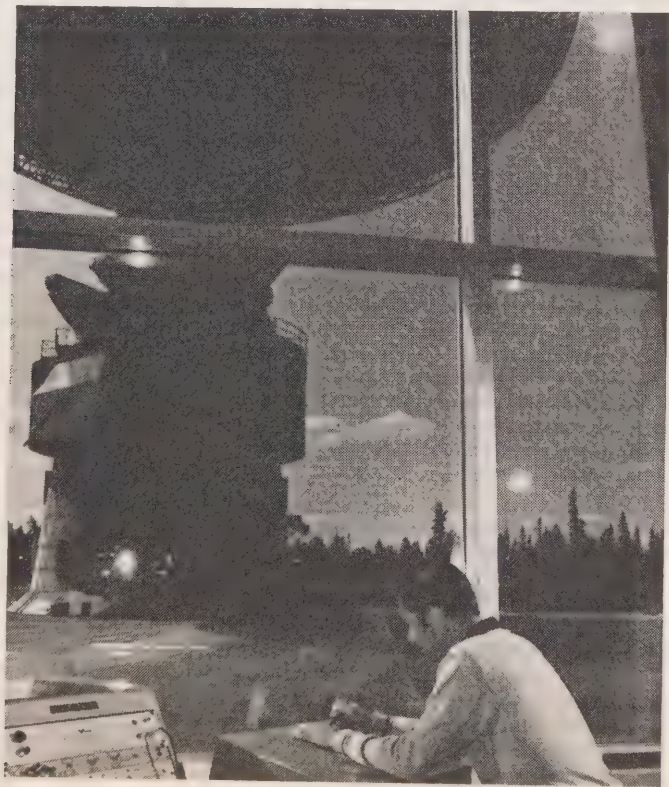
Oceanographic research forms an important part of the Canadian geophysical program. Groups from the Department of Energy, Mines and Resources and from universities contribute to the knowledge of the ocean floor and to air-sea interactions at the ocean surface. The study of the magnetic character of the ocean floor is proving to be vital to an understanding of the history of the oceans and therefore to world geology. Ships of the Bedford Institute of Oceanography have contributed to this study, particularly in the north Atlantic Ocean.

Astronomy.*—Modern astronomical research is based on observations secured with complex optical and radio telescopes. The major centres of this research in Canada have developed within the Federal Government and at a few universities. Research in optical astronomy began early in this century at the Dominion Observatory, Ottawa, and this was followed by the construction of larger telescopes at the Dominion Astrophysical Observatory, Victoria, and the David Dunlap Observatory of the University of Toronto. Other Canadian universities teaching astronomy include the University of Western Ontario, Queen's University, the University of Waterloo, Laurentian University, the University of Manitoba, the University of Saskatchewan, the University of British Columbia and Victoria University. Some of these universities have their own small observatories. Work on the planned new observatory for Mount Kobau in southern British Columbia which was to be equipped with a 156-inch reflecting telescope, was discontinued in August 1968.

* Prepared by Dr. Ian Halliday of the Dominion Observatory, Ottawa.

Canada first entered the field of radio astronomy, the study of radio emissions from beyond the earth, in 1946 when the National Research Council began its study of solar radio waves. Radio astronomy has expanded rapidly and there are now radio telescopes operated by the University of Toronto, by Queen's University, by the Dominion Observatory near Penticton, B.C., and by the National Research Council at a large observatory in Algonquin Park, Ont., where a steerable radio telescope 150 feet in diameter began observations in 1966. An 84-foot parabolic telescope and two large arrays of antennas are in operation at the Penticton site. In 1967 the large telescopes at the Algonquin Radio Observatory and Penticton were used simultaneously as a long-baseline interferometer in the first successful attempt to measure the apparent angular size of quasi-stellar radio sources, or "quasars".

Canadian astronomers are engaged in various specialized fields of research. In the study of the solar system the sun has been studied for many years by both optical and radio techniques with emphasis on solar flares and other phenomena which affect the environment of the earth. Solar eclipses in which the path of totality crosses Canada have been observed whenever possible. Only minor attention has been devoted to study of the planets but major efforts have gone into meteor research. Both photographic and radar equipment are employed in this work and the study of meteor spectra and radar echoes



Scientist at the control console of the radio telescope at NRC's Algonquin Radio Observatory at Lake Traverse in Algonquin Park, Ont. The telescope is one of the most powerful and versatile in the world.

from meteor trails have been particular specialties. There is an increasing interest in the related field of meteorites and Canada has figured prominently in the study and interpretation of old craters caused by the impact of huge meteorites.

Stellar astronomy has been the largest single field of Canadian astronomy. One aspect of this is the accurate determination of the positions and motions of stars in the sky. The Dominion Observatory is continuing an active program of positional astronomy aided by new and highly specialized instruments. The large telescopes at Victoria and Toronto have been used primarily for spectroscopy, one of the major tools of astrophysics. Several programs have been completed in which large groups of stars have been studied individually to determine their true luminosities and motions in the line of sight. The results have then been used for research on the structure of the earth's Milky Way galaxy. From spectroscopic studies of certain types of close double stars, information on such properties as the size, mass, density and temperature of individual stars is secured. Stars whose light varies in intensity have been studied by photography for many clusters of stars and are also studied by photoelectric devices mounted on the telescopes at Victoria, Toronto and the University of Western Ontario.

Although the optical telescopes in Canada have not been used for extragalactic research, many of the stronger sources in the field of radio astronomy are now known to be exceedingly distant objects far beyond the stars of the earth's galaxy. Canadian radio telescopes are and will continue to be engaged in the observation of such sources. At the same time they are also involved in the study of clouds of gas between the stars of the Milky Way system, and this work complements the knowledge gained from spectroscopic research with optical telescopes.

Section 3.—Research Supported by Provincial Governments

Subsection 1.—Provincial Organizations

Five of Canada's provincial governments (Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta) have established research councils or foundations and two others (Ontario and British Columbia) have assisted financially in the setting up of such organizations. Quebec has also announced its intention of establishing a provincial research council and industrial research centre in the near future. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Research and development expenditures by the seven provincial councils or foundations, the sources of funds for such purposes and personnel engaged in research activities are shown in Subsection 2, Tables 5 to 7, p. 414.

Nova Scotia Research Foundation.—This body was created by the Government of Nova Scotia in 1946 to give its people scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. A new \$1,500,000 laboratory building, financed by an Atlantic Development Board grant and occupying a commanding 10-acre site in Dartmouth, N.S., will be completed in early 1969. It will house a staff of about 100, including 70 scientists and technicians.

The Foundation assists universities, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, laboratory and summer assistants, library service and cartographic, photogrammetric and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibiotics, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution and seaweed surveys as well as forest aphid, forest ecology and genetic studies and has assisted studies on the nutrient cycles of lakes, on pressures in underground strata and on crop damage by predators. Its Geophysical Division is equipped to undertake various types of magnetic, gravimetric, resistivity, seismic and electromagnetic explorations, and so assess the possibilities of the existence of oil, gas, potash and other economic mineral deposits in Nova Scotia and in the surrounding sea. The Chemistry Division is equipped with the most modern analytical equipment. The Technical Services Division provides industries in the province with a free field service on technical information and industrial engineering. Technical assistance is also provided on corrosion problems, equipment and process trouble-shooting and on new product development. The Operational Research Division prepares studies on provincial resource utilization and undertakes industrial studies at the request of individual firms.

A *Research Foundation Bulletin* is issued from time to time to keep industry advised of Foundation activities and also of important discoveries in science and technology. The *Research Record* provides a descriptive account of past research projects.

New Brunswick Research and Productivity Council.—This Council, with financial support from the New Brunswick Government and in specific areas from federal sources, provides an international management consulting service to governments, banking institutions and private industry and undertakes consultation and contract work on a repayment basis from industry. It has 65,000 sq. feet of laboratory space and employs a staff of more than 50 persons. The Council specializes in management consulting, engineering and technical information services, conducts training courses in management techniques and carries on applied research in the fields of mechanical and control engineering, food technology, microbiology and mineral technology. Policies are established by 13 Council members representative of provincial industry, labour, government and education, with the help of specialist advisory committees. The Executive Director has supervision over and direction of the work of the staff and has charge of all matters relating to the administration of the affairs of the Council. The Chairman of the Council reports annually to the Premier of the province.

Manitoba Research Council.—The Manitoba Research Council consists of seven members representing natural-resource-based industry, manufacturing, the University of Manitoba and labour. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The objectives of the Council are to promote or carry on, or cause to be promoted or carried on, research and scientific inquiries respecting agriculture, other natural resources, industry or other segments of the economy of the province and to help secure for Manitoba the benefits of research and scientific inquiries carried on elsewhere. The preponderance of small industrial establishments in Manitoba and their need for assistance in developing a more scientifically based production capability to improve their competitive position in domestic and world markets was the major reason for the establishment of the Council. At present it maintains an office in the Provincial Government Administration Building (Norquay Building) in Winnipeg.

Saskatchewan Research Council.—This Council was set up in 1947 under an Act of the Government of Saskatchewan. The Council carries out research in the physical sciences, both pure and applied, with the aim of improving the provincial economy. It is

therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own. Its research program was carried on at the University of Saskatchewan and was promoted by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1957 and were extended in 1963. In the present program of research the emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. A large part of the program is carried out by the permanent staff, numbering about 60, but some of the Council's research is still promoted by grants to university staff. The members of the controlling body, the Council proper, are appointed by the Lieutenant-Governor in Council and consist of representatives of the government, the university and industry.

Research Council of Alberta.—The Province of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that which set up the National Research Council and is principally financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province and toward the establishment of new industrial operations within the province. Investigations in the Council laboratories and pilot plant are organized into two branches—the Earth Sciences Branch which includes all work on groundwater geology, geological surveys and research, mineral beneficiation and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, chemical process and product development, and gasoline and oil testing. There are, in addition, groups dealing with industrial engineering services, highway research, a co-operative program on cloud physics with reference to the hail problem, and a number of special projects.

The operations of the organization are controlled by a Council of 10 individuals representative of the government, the universities and industry. The various research projects are reviewed by advisory committees composed of specialists in each field, drawn from industry, the universities and the provincial government.

The main Council laboratories are located on the University of Alberta campus in Edmonton. A pilot plant facility is located in the Clover Bar area east of the city.

Ontario Research Foundation.*—The Ontario Research Foundation, established in 1928, is an independent corporation. It derives its powers from a special Act of the Ontario Legislature and is responsible to a Board of Governors consisting of leading members of the industrial, commercial and scientific communities who are appointed by the Lieutenant-Governor in Council. The organization was financed initially by an endowment fund, provided by industrial and commercial corporations and private individuals and an equal block grant from the provincial government. Most of its current income is derived from contract research undertaken mainly for industry. In recent years the Ontario Government has provided a direct annual grant to ORF, the amount of which is directly proportional to ORF's income from industry.

The Foundation is concerned primarily with the development of Canadian industry through the application of science and technology. Also, through the various departments

* See also p. 410.

of the Ontario Government, it undertakes work relative to the natural resources of the province. Foundation activities are not restricted to the province; work is undertaken for any organization in Canada on the same basis.

The Foundation contributes to the industrial economy and to the general welfare by: (1) undertaking industrial research and development for companies as requested; (2) undertaking research and development for governmental agencies as requested, particularly with respect to natural resources and to defence; (3) providing and maintaining an effective and efficient applied research and development facility for the use of industry and government agencies, using funds provided by the Ontario Government to support the back-up research necessary for this purpose; and (4) bringing to the attention of industry and governmental agencies research opportunities that promise economic or social benefits.

Situated in the Sheridan Park Research Community, 17 miles west of Toronto, and serving as the nucleus of that scientific centre, ORF provides the most modern facilities and equipment for scientific and technological investigations. Its staff of approximately 250 scientists, engineers, technicians, and service personnel has diversified academic training and industrial experience and is so organized that these specialized talents can be applied to individual research and development projects. In effect, the staff of ORF constitutes a reservoir of scientific and technical abilities from which industrial or governmental sponsors can draw at will.

Since its establishment, ORF has provided numerous companies—from the very small to the very large—with research and development services. These have ranged from short-term investigations and feasibility studies, through product and process development, to long-range fundamental scientific investigations. All research and development projects are conducted on a confidential basis—this includes all business, technical or proprietary information revealed to ORF by clients or prospective clients. Patents resulting from research and development studies are assigned to the client.

British Columbia Research Council.*—This Council is a non-profit, industrial research institute with offices and laboratories at 3650 Wesbrook Crescent, Vancouver 8, B.C. Its function is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific knowledge. The Council carries out contract research for clients on a confidential basis, initiates "in-house" research programs designed to promote and utilize the resources of the province, and provides a free technical information service in collaboration with the National Research Council. The Council is active in the areas of applied biology, chemistry, engineering, physics, operations research, industrial market studies and economic feasibility studies.

Subsection 2.—Expenditures by Provincial Organizations on Scientific Activities

As stated in Subsection 1, seven provinces have established research councils or foundations, each having the primary role of assisting firms with technical problems and of aiding with the development of provincial natural resources. Table 5 shows the approximate expenditures of these establishments as reported in the latest DBS biennial survey of expenditures on industrial research and development in Canada. There seem to be two main differences between the pattern shown for these provincial establishments and that shown for industrial research and development expenditures as a whole—the first is that wages and salaries seem to account for a larger portion of current intramural costs and the second is the relative unimportance of extramural payments.

* See also p. 410.

5.—Expenditures on Research and Development by Provincial Research Councils and Foundations, 1964-68

Type	1964	1965	1966	1967	1968 ¹
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Intramural Expenditures	6.8	9.9	13.0	14.4	15.9
Current—					
Wages and salaries.....	3.6	4.2	4.7	5.3	5.8
Other.....	2.5	2.8	3.3	3.6	4.2
Capital—					
Land and buildings.....	0.3	2.3	4.2	4.3	4.2
Equipment.....	0.4	0.6	0.8	1.2	1.7
Extramural Expenditures	0.2	0.1	0.1	0.1	0.1
Grand Totals, Expenditures	7.0	10.0	13.1	14.5	16.0

¹ Forecast by respondents.

As shown in Table 6, the provincial governments are by far the most important source of funds, although some councils or foundations rely on them more than others. Payments for research and development contracts from Canadian industry are the second largest source of revenue, the Federal Government providing most of the remaining funds. The contribution of the Federal Government in 1967 was especially important as a source of the capital funds required by the councils and foundations. Table 7 shows that total personnel employed by these establishments increased 12 p.c. from 1965 to 1967.

6.—Percentage Distribution of Funds for Research and Development Performed by Provincial Research Councils and Foundations, 1965 and 1967

Source	1965	1967	Source	1965	1967
	p.c.	p.c.		p.c.	p.c.
Self.....	3.4	3.3	Other Canadian.....	0.3	0.5
Provincial governments.....	65.4	64.2	Foreign.....	3.3	2.6
Federal Government.....	8.0	13.8			
Canadian industry.....	19.6	15.6	Totals	100.0	100.0

7.—Personnel Engaged in Research and Development by Provincial Research Councils and Foundations, 1965 and 1967

(Full-time equivalents)

Type	1965	1967	Type	1965	1967
	No.	No.		No.	No.
Scientists and Engineers	271	288	Supporting Personnel	327	382
Engineers.....	80	87	Technicians.....	168	198
Chemists.....	79	79	Workers.....	33	38
Earth scientists.....	36	37	Others.....	126	146
Other physical scientists.....	18	26			
Life scientists.....	34	32	Totals, Personnel	598	670
Other.....	6	7			
Administrators.....	18	20			

Section 4.—University Research

The two primary roles of universities are generally considered to be teaching and research. Canadian universities occupy a unique position as part of Canada's resources for research. They have special responsibilities not shared significantly by other institutions. Traditionally their role has been that of generating new knowledge *per se* and research of a basic nature has been favoured. Currently, however, there is a growing interest in applied research in the universities, expressed particularly by the professional schools. Nevertheless, basic research remains a primary responsibility of the universities

and a great deal of the basic research conducted in Canada is conducted in them. Research also provides a highly valuable contribution to the quality of university teaching. A further function of research in the university setting is the development of manpower to serve the research needs of society, since training for research can be conducted only in an environment where research is being undertaken. Some interest is being shown by Canadian universities in making greater commitments to research essential to Canadian goals, such as research in relation to water pollution, urban problems and medicine, which is occupying increasing numbers of faculty.

The total amount available to Canadian universities and colleges for sponsored, assisted and contracted research in 1966-67 was \$80,729,000, more than double the \$36,796,000 provided in 1963-64. The Federal Government's contribution in 1966-67 was \$52,120,000 or about 65 p.c. of the total; direct contributions from provincial governments amounted to \$11,756,000; foundations, associations, etc., provided \$7,021,000; and business and industry provided \$2,695,000. Five universities received about 50 p.c. of the total funds from all sources and 10 universities received 82 p.c. The largest single direct contributor to university research is the National Research Council which in 1967-68 provided research grants amounting to \$31,400,000 (in addition to \$6,100,000 allocated to major research facilities) covering the fields of natural sciences and engineering. The Medical Research Council in 1967-68 contributed \$9,600,000 by way of research grants to universities (in addition to \$1,370,000 for major facilities). Other contributors included the Defence Research Board (\$3,700,000), the Department of National Health and Welfare (\$3,000,000), the Canada Department of Agriculture (\$613,000), and a number of departments and agencies contributing smaller amounts. In the social sciences and humanities the major contributor to university research is the Canada Council which in 1967-68 provided \$4,100,000, exclusive of about \$1,000,000 for library acquisitions. A score of federal departments or agencies supported some work in the social sciences and humanities but their contributions were small. The total from federal sources, including the Canada Council, amounted to \$5,800,000. Scholarship support from the Canada Council, the National Research Council and the Medical Research Council in 1967-68 amounted to \$16,000,000.

University of Toronto's new Medical Building is one of the finest and best-equipped medical schools and research institutes on the North American Continent, a building that has been designed to keep pace with the rapidly changing character of scientific and medical research.



The number of full-time university teachers has been increasing steadily and rapidly, reaching 16,529 in 68 universities and colleges in 1967-68. Of these, 5,393 were in the fields of natural sciences and engineering; health sciences accounted for 1,619; humanities, 4,028; social sciences, 5,152; and 336 were classified as faculty administration. Preliminary findings in a cost study being conducted under the auspices of the Association of Universities and Colleges of Canada and other groups indicate that faculty devote on the average about 29 p.c. of their time to research and graduate student supervision.

Graduate students are the source of future research workers. In 1967-68, according to a DBS survey of higher education, 35,243 graduate students were enrolled in Canadian universities, of whom 24,187 were full-time students registered in 52 universities and colleges. The Office of Economic Studies of the National Research Council has noted a relative decline in the percentage of graduate students enrolled in natural sciences and engineering. In 1963-64 one out of every two graduate students was enrolled in science or engineering; in 1966-67 there were 9,200 full-time science and engineering graduate students and 11,900 in other disciplines. It was estimated that 1,245 Ph.D's would be awarded by Canadian universities in 1967-68, of which 872 would be in the science and engineering fields.

Section 5.—Industrial Research

Subsection 1.—Industrial Research and Development Activities

Canadian firms are becoming increasingly involved in research and development activities, particularly those associated with fabrication and end-product manufacture. The need to develop new or improved products to serve expanding domestic and foreign markets, to meet competition from other Canadian and foreign firms and to exploit efficiently the country's natural resources has required industry to form and expand competent research and development units. In the present decade, capital and operating expenditures for industrial research and development (R & D), encouraged by the growth in markets, production facilities, financial resources and supplies of technically skilled manpower, have increased rapidly, as shown in the chart on p. 384, accompanied by a growth in the professional and supporting personnel of about 10 p.c. per annum; capital expenditures more than tripled from 1961 to 1965.

The Federal Government recognizes the need for a strong research and development effort in Canada and has inaugurated several programs of direct assistance. The Department of Industry administers the Defence Development Sharing Programme and the Programme for the Advancement of Industrial Technology. The National Research Council and the Defence Research Board both make grants in support of industrial research projects. In addition, the Industrial Research and Development Incentives Act (IRDIA) authorizes the Department of Industry to make substantial grants to firms expanding their research and development programs.

The Programme for the Advancement of Industrial Technology is of particular interest because of its innovative slant and selective nature. It was established in 1965 and is the civil counterpart to the Defence Development Sharing Programme. Its basic aim is to help Canadian secondary industry up-grade its technology and expand its innovative activity by underwriting the technical and market risks of specific product or process development projects which involve a significant advance in technology and which, if successful, offer good prospects for commercial exploitation in domestic and foreign markets. Priority goes to projects which increase productivity or otherwise contribute directly to attain a unique capability or technical leadership, taking advantage, where possible, of Canada's natural resources and skills. Three of many successful innovations assisted by the Programme can be mentioned by way of example: Canadair Limited developed the CL-215 fire bomber/spray/utility aircraft in response to the country's forest and resource development requirements; McPhar Geophysics Limited developed a new electromagnetic

system for airborne geophysical prospecting; RCA Victor Company Limited developed and has successfully exported special electronic communication satellite earth station systems and equipment.

Employment Related to R & D Activities.—The level of employment of scientists and engineers in the various sectors of industrial research and development gives a measure of the corresponding activity. The first 10 industries rank as follows (1965):—

Rank	Industry	Scientists and Engineers in R & D	Per Cent of Total
		No.	
1	Electrical products.....	1,737	27.3
2	Chemical products (other than drugs and medicines).....	946	14.8
3	Aircraft and parts.....	665	10.4
4	Paper.....	454	7.1
5	Drugs and medicines.....	299	4.7
6	Petroleum products.....	273	4.3
7	Scientific and professional instruments.....	257	4.0
8	Mines.....	237	3.7
9	Food and beverages.....	231	3.6
10	Primary metals (ferrous).....	218	3.4
ALL INDUSTRIES.....		6,367	100.0

The above 10 industries absorb some 83 p.c. of the scientists and engineers employed in R & D and represent more than half the sales volume of Canadian industry; the first three industries employ more than 50 p.c. Some 64 p.c. of the professionals involved in industrial R & D are engineers, which reflects the emphasis on applied research and development. About 24 p.c. of the scientists and engineers have advanced degrees (approximately 2 p.c. Ph.D's and 12 p.c. M.Sc's).

It is possible to distinguish a group of research intensive industries by considering the number of scientists and engineers employed in R & D per million dollars of sales as follows (1965):—

Rank	Industry	Scientists and Engineers per \$1,000,000 Sales
		No.
1	Scientific and professional instruments.....	2.22
2	Aircraft and parts.....	2.04
3	Drugs and medicines.....	1.62
4	Electrical products.....	1.37
5	Chemical products (other than drugs and medicines).....	0.69
6	Mines.....	0.27
7	Textiles.....	0.27
8	Rubber.....	0.21
9	Primary metals (non-ferrous).....	0.19
10	Machinery.....	0.18

In all industries reporting, there were on the average 0.27 scientists and engineers in R & D per \$1,000,000 of sales; R & D expenditures were 1.1 p.c. of sales. The first five industries shown, which employed about 60 p.c. of the total professional staff in R & D, are clearly differentiated from the remainder by ratios of from two to 12. These five industries produce relatively sophisticated products and undertake more R & D in Canada than some of the others; for example, 62 p.c. of rubber, 35 p.c. of non-ferrous primary metals and 25 p.c. of machinery R & D expenditures are foreign. Also, research and development undertaken for military purposes, which accounts for 25 p.c. of the total R & D expenditures, was very important to some of the five top industries; military R & D accounted for about 57 p.c. of the intramural R & D expenditure for the aircraft industry, 63 p.c. of that for the scientific and professional instruments industry, and 36 p.c. for the electrical products industry.

Subsection 2.—Industrial Research and Development Expenditures

The latest biennial DBS survey of expenditures on industrial research and development in Canada was carried out in 1968 and will, when completed, give estimates for 1965 to 1968. At the time of printing, however, the results of this survey were not yet available and those for the previous survey taken in 1966 are summarized in the following tables; details of the 1968 survey will be contained in the DBS publication *Industrial Research and Development Expenditures in Canada, 1967*.

The type of industrial research and development covered by these surveys ranges from pure research designed to obtain new knowledge in the physical and life sciences to conceiving and developing new products and processes, or major changes in products and processes, and bringing them to the stage of production. Such activities as market research and process and quality control are excluded. Companies surveyed were asked to report the cost of research and development done within the company in Canada and payments for research done outside the company in and outside Canada.

Spending on industrial research and development has increased every year during the period 1963-66. The annual increases in current expenditures from 1963 to 1964 and from 1964 to 1965 were about 20 p.c., but this rate seems to have declined to about 5 p.c. in 1965 to 1966. However, the 1966 estimates are largely forecasts. A possible explanation of this apparent decline may be that several major projects with heavy costs for prototype materials or 'expendable' research equipment are reaching completion. Both the aircraft and primary metals industries forecast declines in expenditures in 1966.

Two other observations may be made from the data in Table 8. The first is that expenditures for research and development plant and equipment seem to continue at a rate of about 20 p.c. of current intramural costs. The second is that the size and relative importance of payments for research and development performed abroad seem to be declining. Indeed, in 1965 companies reported receiving almost as much for such purposes from other countries as they spent abroad.

8.—Total Industrial Research and Development Expenditures, 1963-66

Item	1963	1964	1965	1966 ¹
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Current Expenditures—				
Intramural costs.....	153.6	188.3	235.0	248.0
Wages and salaries.....	81.4	95.0	115.0	128.2
Other.....	72.2	93.3	120.0	119.8
Extramural payments.....	30.8	35.4	29.3	30.5
In Canada ²	1.4	1.6	2.2	2.3
Outside Canada.....	29.4 ³	33.8 ³	27.1	28.2 ³
Totals, Current Expenditures.....	184.4	223.7	264.3	278.5
Capital Expenditures—				
Land and buildings.....	10.6	14.8	13.8	20.6
Equipment.....	17.1	31.7	36.1	31.5
Totals, Capital Expenditures.....	27.7	46.5	49.9	52.2
Totals, All Expenditures.....	212.1	270.2	314.2	330.7

¹ Forecast by respondents. ² Adjusted by DBS to remove those payments made by one Canadian firm to another, since such payments are covered in the intramural costs. ³ DBS estimate.

Table 9 shows the current intramural research and development expenditures by performing industries. In 1965, three industries—electrical products, aircraft and chemical products—accounted for about 57 p.c. of the total expenditures. Since 1955, the year of the first survey, these industries have spent more for current intramural research and development than all others combined.

9.—Current Intramural Research and Development Expenditures, by Industry, 1963-66

Industry	1963	1964	1965	1966 ¹
	\$'000	\$'000	\$'000	\$'000
Mines.....	5,151	6,818	8,404	8,817
Gas and oil wells.....	688	1,293	1,826	1,873
Manufacturing—				
Food and beverages.....	3,788	4,543	5,422	6,097
Rubber.....	1,903	2,099	2,485	3,115
Textiles.....	2,597	2,816	3,366	3,220
Wood.....	154	195	300	297
Furniture and fixtures.....	118	127	114	121
Paper.....	10,985	14,389	14,460	16,174
Primary metals (ferrous).....	3,014	3,777	5,603	4,016
Primary metals (non-ferrous).....	9,054	9,183	9,671	10,348
Metal fabricating.....	3,646	3,170	3,296	3,167
Machinery.....	6,496	7,743	8,154	8,879
Aircraft and parts.....	30,846	40,526	54,469	50,838
Other transportation equipment.....	675	1,811	1,990	1,840
Electrical products.....	30,956	40,015	55,824	60,504
Non-metallic mineral products.....	1,916	1,889	1,784	2,104
Petroleum products.....	7,699	8,655	11,715	15,657
Drugs and medicines.....	4,413	5,583	6,929	8,349
Other chemical products.....	17,985	20,308	22,926	24,860
Scientific and professional instruments.....	5,007	5,366	7,477	7,872
Other manufacturing.....	2,344	3,470	3,776	4,100
Totals, Manufacturing.....	143,596	175,665	219,761	231,558
Transportation and other utilities.....	3,172	3,181	3,339	3,672
Other non-manufacturing.....	987	1,396	1,679	2,063
Totals, All Industries.....	153,594	188,353	235,009	247,983

¹ Forecast by respondents.

Because of difficulties of interpretation and estimation, the figures shown in Table 10 cannot be more than approximations. However, they do indicate that the research and development performed within an industrial group may be for the benefit of some other related industry or for a new 'industry'. Furthermore, company groups may have been assigned to one industry, whereas the activities of the group, including research and development, may actually cover several industries. The relevant table in *Industrial Research and Development Expenditures in Canada, 1965*, which gives the distribution by industry, shows this more clearly. For example, about three quarters of the research and development for rubber products and almost one half of that for textiles were performed by the chemical industry; also, research and development for the aircraft industry was largely for other products—about \$27,000,000 was spent on aircraft, \$10,000,000 on guided missiles and space vehicles, and \$22,000,000 on other transportation equipment.

10.—Current Intramural Research and Development Expenditures, by Product Group, 1965

Product Group	Amount	P.C. of Total	Product Group	Amount	P.C. of Total
	\$'000,000			\$'000,000	
Food and beverages.....	5.2	2.2	Electronic components.....	44.2	18.8
Rubber products.....	3.2	1.3	Electrical industrial apparatus.....	5.6	2.4
Textiles.....	6.5	2.8	Household electrical products.....	2.0	0.9
Forest products.....	12.8	5.5	Other electrical products.....	2.5	1.1
Smelting and refining.....	19.3	8.2	Petroleum and coal products.....	12.1	5.2
Rolling, casting and extruding.....	3.4	1.4	Drugs and medicines.....	7.3	3.1
Fabricated metal products.....	3.1	1.3	Industrial chemicals.....	5.7	2.4
Machinery.....	11.8	5.0	Plastics and synthetic resins.....	7.0	3.0
Scientific and professional instruments.....	5.3	2.3	Other chemicals and chemical products.....	7.5	3.2
Aircraft.....	26.9	11.5	Other.....	8.8	3.7
Guided missiles and space vehicles.....	9.9	4.2			
Motor vehicles.....	3.1	1.3			
Other transportation and equipment.....	21.7	9.2			
			Totals, All Groups.....	235.0	100.0

For all Canadian industry, the performing company is by far the most important source of funds. However, Table 11 gives sources of funds for total current and capital research and development expenditures. Since capital expenditures are not usually financed by governments or other companies supporting a firm's research and development program, the performing company would be a less dominant source of funds for current intramural expenditures—perhaps accounting for about 65 p.c. rather than 71 p.c. Other significant sources are the Federal Government, foreign governments and foreign related companies. Industries and firms do not rely on the same sources to the same extent. For example, about 67 p.c. of the research and development funds for the aircraft industry seems to come from outside the performing company. The direct support of the Federal Government goes mainly to two industries—aircraft (52 p.c.) and electrical products (31 p.c.). Funds from foreign sources account for about one fifth of all intramural expenditures for the drug, petroleum and aircraft industries.

11.—Sources of Funds for Intramural Research and Development, by Industry, 1965¹

Industry	Canadian Sources				Foreign Sources ³	Total
	Reporting Company	Parent, Affiliated and Subsidiary Companies	Government of Canada	Other ²		
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Mines.....	9,428	22	511	105	315	10,381
Gas and oil wells.....	1,926	427	—	—	601	2,954
Manufacturing—						
Food and beverages.....	6,903	16	299	1	—	7,219
Rubber.....	1,922	—	202	—	852	2,976
Textiles.....	4,269	54	50	18	30	4,421
Wood.....	224	—	—	116	—	340
Furniture and fixtures.....	114	—	—	—	—	114
Paper.....	21,307	974	320	2,198	428	25,227
Primary metals (ferrous).....	7,634	—	47	—	12	7,693
Primary metals (non-ferrous)...	10,201	815	288	203	21	11,528
Metal fabricating.....	3,418	—	193	4	—	3,615
Machinery.....	7,474	—	101	128	729	8,432
Aircraft and parts.....	17,798	219	25,982	3	10,608	54,610
Other transportation equipment.	1,955	—	46	—	—	2,001
Electrical products.....	43,219	37	15,468	853	3,456	63,033
Non-metallic mineral products..	1,013	20	220	5	647	1,905
Petroleum products.....	17,767	—	65	87	4,807	22,726
Drugs and medicines.....	7,542	—	403	—	2,289	10,234
Other chemical products.....	27,282	188	601	—	397	28,468
Scientific and professional instruments.....	4,020	—	2,953	263	477	7,713
Other manufacturing.....	2,106	78	1,789	—	50	4,003
Totals, Manufacturing.....	186,168	2,401	49,007	3,879	24,803	266,258
Transportation and other utilities...	3,488	—	—	—	—	3,488
Other non-manufacturing.....	603	172	421	381	222	1,799
Totals, All Industries.....	201,613	3,022	49,939	4,365	25,941	284,880
Percentage of total funds.....	70.8	1.1	17.5	1.5	9.1	100.0

¹ Includes capital expenditures.

² Includes the membership fees of research institutes and payments for research and development performed under contract for non-related companies.

³ Includes foreign governments.

Section 6.—International Comparisons in Research and Development Expenditures

In the early 1960s, Canada ranked eighth among a selected group of industrialized countries in terms of percentage of gross national product (GNP) spent on research and development (as shown in Table 12) and third in GNP per capita.

12.—Comparison of Research and Development Effort in Some Developed Countries or Areas

SOURCE: *Reviews of National Science Policy: U.S.A., OECD, Paris 1968.*

Country or Area	GNP (1964)	GNP per capita (1964)	Popu- lation (1964)	R & D Expenditure		
				Amount	As P.C. of GNP	Year
	\$'000,000,000	\$	'000,000	\$'000,000		
Canada.....	43.54	2,109	19.2	425	1.0	1963
European Economic Community (EEC), excl. Luxembourg.....	273.98	1,774	179.6	3,462	1.4	1963-64
Germany.....	103.98	1,674	58.2	1,436	1.4	1964
France.....	88.12	897	48.4	1,299	1.6	1963
Italy.....	49.58	1,502	51.1	290	0.6	1963
Belgium.....	15.44	1,385	9.3	123	0.9	1963
Netherlands.....	16.86		12.1	314	1.9	1964
Japan.....	69.08	622	96.9	892	1.5	1963
Sweden.....	17.47	2,281	7.6	253	1.5	1964
United Kingdom.....	91.90	1,700	54.2	2,159	2.3	1964-65
United States.....	638.82	3,243	192.1	21,323	3.4	1963-64

Within this group of industrialized countries there are wide differences in total resources, in population density, in defence and technological commitments, and in industrial, commercial and political structure. These qualifications must be kept in mind when making comparisons.

Research and development expenditures in Canada (Chart I, p. 383), expressed in terms of GNP, were about one third of those in the United States, one half of those in the Netherlands and the United Kingdom, and approximately two thirds of those of Germany, France, Sweden and Japan.

Government support of scientific activities in Canada doubled during the period 1960-66, reaching \$400,000,000 in 1966 (Chart II, p. 384). The proportional growth rate was close to that for government support of research and development in Britain. The contributions of industry and university to research and development funds increased rapidly during this period (Chart II).

CHAPTER IX.—CRIME AND DELINQUENCY*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people, and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and

* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Prepared by the Criminal Law Section, Department of Justice, Ottawa.

organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciary are given in Chapter II, pp. 77-79, and provincial judiciaries are dealt with briefly at p. 79.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbidge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Narcotic Control Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility, the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and dangerous sexual offenders partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating

* Salmond on *Jurisprudence*, 7th Edition, p. 496.

to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see pp. 442-444).

It is most important to note that in 1960 (SC 1960, c. 44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1, which reads as follows:—

"1. It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,

- (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law;
- (b) the right of the individual to equality before the law and the protection of the law;
- (c) freedom of religion;
- (d) freedom of speech;
- (e) freedom of assembly and association; and
- (f) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the Criminal Code.

In 1961 (SC 1960-61, cc. 43-44), the offence of murder was divided into capital and non-capital, the death penalty was abolished in relation to the offence of non-capital murder, and the term *criminal sexual psychopath* was dropped and the term *dangerous sexual offender* substituted; in 1965 (SC 1964-65, c. 53) provision was made for the right to appeal in *habeas corpus* proceedings.

The concept of "non-capital murder" was introduced into Canadian criminal law in 1961. At that time, capital murder was defined to include, for example, planned and deliberate murder, murder in the course of certain violent acts and murder of peace officers and prison officers. Life imprisonment was substituted for the death penalty in cases where the accused was convicted of non-capital murder. In 1966, the House of Commons, on a free vote, rejected a Bill under which the death penalty for murder would have been completely abolished but in 1967 (SC 1967-68 c. 15) an Act was passed under which the definition of capital murder is restricted to the murder of peace officers or prison officers. This Act was brought into force on Dec. 29, 1967, and will continue in force for a period of five years from that day. The Act will then expire unless before the end of the five-year period Parliament by a joint resolution of both Houses directs that it shall continue in force. If the Act is not continued in force before the expiry of the five-year period, the broader definition of capital murder introduced in 1961 will again come into operation. It should be noted that the law contains a provision whereby a person in respect of whom sentence of death has been commuted or a person who has been sentenced to life imprisonment for capital murder shall not be released without the prior approval of the Governor in Council.

A Bill (C-195) proposing a number of changes in criminal law and procedure was introduced and given first reading in the House of Commons on Dec. 21, 1967. The proposals relating to the Criminal Code constitute the most comprehensive review of that Code since it came into force on Apr. 1, 1955. Among the changes to the substantive law

proposed in the Bill are amendments relating to gaming and lotteries, "drinking and driving", homosexual acts and therapeutic abortion.

At present, lotteries and games of chance or mixed chance and skill are, with limited exceptions, unlawful. Under the proposals in the Bill, it would be lawful for the Federal Government to conduct a lottery and for a provincial government to pass legislation enabling it to conduct a lottery either alone or in conjunction with one or more other provincial governments. The proposals would also enable provincial authorities to issue licences under which charitable and religious organizations would be authorized to conduct lotteries and games and under which agricultural fairs and exhibitions would no longer be restricted to lotteries and games conducted on the exhibition grounds.

Under a proposed amendment in the Bill, a person would be guilty of an offence if he drives a motor vehicle while the proportion of alcohol in his blood exceeds 80 milligrammes of alcohol in 100 millilitres of blood. It would be compulsory for a driver to take a blood test when required to do so by a peace officer who has reasonable and probable grounds to believe that the person's ability to drive is impaired and it would be an offence for a person to fail or refuse without reasonable excuse to take a blood test when so required. It is also proposed that, where such blood test is taken within two hours of the alleged offence and the various conditions set out in the legislation relating to the taking of the test are complied with, the result of the test would be *prima facie* evidence of the proportion of alcohol in the driver's blood.

The Bill also contains provisions whereby therapeutic abortion would not be unlawful where the operation is carried out after the therapeutic abortion committee of an accredited hospital has certified that the continuation of the pregnancy would or would be likely to endanger the life or health of the female. Under the proposed amendments, the operation could be performed only by a duly qualified medical practitioner and only in an accredited hospital and the Minister of Health of a province would be entitled to information relating to the issue of a certificate and to the operation.

The Bill also contains a provision, the principal effect of which would be to remove from the ambit of the criminal law homosexual acts committed in private between two consenting adults.

Other significant changes proposed in the Bill relate to the publication of the evidence at preliminary enquiries, the procedure in the case where an accused person may be unfit to stand trial, the use of suspended sentence and probation, and certain new rights of appeal.

As noted earlier in this Section, an amendment was made to the Criminal Code in 1959 restricting the publication of an admission or confession at a preliminary inquiry. Under a proposal contained in the Bill, provision would be made whereby, on the application of the accused, the magistrate or justice holding a preliminary inquiry may make an order forbidding publication of *any* of the evidence until the accused has been discharged or, if he has been committed for trial, the trial has ended. Apart from such an order, of course, the present prohibition against publishing an admission or confession would remain.

At present, where there is reason to believe that the accused person is unfit on account of insanity to stand trial, the issue of his fitness to stand trial is decided as soon as it arises. If the court decides that the accused is not fit to stand trial, he is detained in custody at the pleasure of the Lieutenant-Governor. As the merits of the case against him are not tried, it is possible for an innocent person to be so detained. Under the proposed amendments, the court would have the power to postpone dealing with the issue of fitness to stand trial until after the prosecutor has presented his evidence. If the prosecutor's evidence is not sufficiently strong to make out a case, the accused would be acquitted and set free. If he required treatment for a mental condition, he would be dealt with under the applicable provincial mental health legislation instead of under the Criminal Code.

In addition, in order to safeguard the rights of those persons who are found unfit to stand trial and therefore detained in custody, the Lieutenant-Governor of the province would be authorized to appoint a board to review at least every six months the case of every person so detained. This same board would also review at least every six months the case of every person who is held in custody in the province following an acquittal on account of insanity at the time the offence was committed.

In regard to sentence, the Bill contains provisions which would enable courts to make more liberal use of suspended sentences, with or without probation. At present, the fact that the offender has more than one previous conviction generally prevents the court from suspending the passing of sentence. The proposed amendments would remove this restriction; would enable probation orders to be transferred from one province to another; would enable the court to make a probation order in addition to a sentence of imprisonment not exceeding two years; and would make it a substantive offence, punishable on summary conviction, for a person on probation wilfully to refuse to comply with the probation order.

The Bill also contains amendments relating to appeals by way of new trial in summary conviction cases which are designed to make the institution of such appeals less complicated and costly. At present, for example, the appellant must supply the appeal court with a transcript of the evidence taken at the trial, unless the appeal court makes an order dispensing with such transcript. Under a proposal contained in the Bill, it would no longer be necessary for the appellant to provide the transcript unless the appeal court specifically ordered him to do so.

The Bill also proposes to narrow the definition of "dangerous sexual offender" which was introduced in 1961 (SC 1960-61, cc. 43-44) and to give the court of appeal express power to order a new hearing in the case of an appeal arising out of an application for preventive detention of a person as a habitual criminal or as a dangerous sexual offender.

Section 2.—Adult Offenders and Convictions

Offences may be classified under two headings, "indictable offences" and "offences punishable on summary conviction". Indictable offences are grouped in two main categories: (1) offences that violate the Criminal Code and (2) offences against federal statutes. These include the graver crimes. Offences punishable on summary conviction—those not expressly made indictable—include offences against the Criminal Code, provincial statutes and municipal by-laws. It is debatable how far some summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort, as, for example, parking violations or practising trades without licence but, on the other hand, summary conviction offences may include such serious charges as assault and contributing to juvenile delinquency.

The following Subsection 1 deals with adults convicted of indictable offences, Subsection 2 with young adult offenders convicted of indictable offences, Subsection 3 with convictions for summary conviction offences and Subsection 4 with appeals.

Subsection 1.—Adults Convicted of Indictable Offences

Statistics of indictable crimes are based on persons, so that it may be possible to evaluate the population engaged in prohibited activities and to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, although individuals may be charged with more than one offence, only one offence

is tabulated for each person. This offence is selected according to the following criteria: (1) if the person were tried on several charges, the offence selected is that for which proceedings were carried to the farthest stage—conviction and sentence; (2) if there were several convictions, the offence selected is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence selected is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another—for example, charged with murder and convicted of manslaughter—the offence selected is the one for which the person was convicted.

In 1966 there were 51,080 adults charged with 89,176 indictable offences, of whom 45,670 were found guilty of 79,865 offences. In the previous year there were 46,662 adults charged with 83,796 indictable offences, of whom 41,832 were found guilty of 75,300 offences.

1.—Persons Charged and Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1965 and 1966

Province or Territory	Persons Charged		Persons Convicted				Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1965	1966	1965		1966		1965	1966
			No.	p.c.	No.	p.c.	No.	No.
Newfoundland.....	784	795	761	97.1	784	98.6	267	269
Prince Edward Island.....	183	110	178	97.3	107	97.3	262	154
Nova Scotia.....	1,625	1,694	1,446	89.0	1,517	89.6	297	310
New Brunswick.....	1,065	1,338	1,034	97.1	1,293	96.6	271	332
Quebec.....	10,130	11,185	9,095	89.8	10,102	90.3	251	272
Ontario.....	16,392	17,946	14,393	87.8	15,745	87.7	323	343
Manitoba.....	2,906	2,773	2,643	90.9	2,482	89.5	417	391
Saskatchewan.....	2,028	2,219	1,890	93.2	2,052	92.5	310	334
Alberta.....	4,526	4,890	4,234	93.5	4,508	92.2	465	488
British Columbia.....	6,789	7,759	5,941	87.5	6,750	87.0	493	535
Yukon and Northwest Territories.....	234	371	217	92.7	330	88.9	969	1,454
Canada.....	46,662	51,080	41,832	89.6	45,670	89.4	330	352

Table 2 classifies indictable offences by type of offence for 1965 and 1966. Class I covers offences against the person and in 1966 there were 6,582 males and 366 females convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering, extortion and robbery—serious crimes which involve acts of violence—are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1966 there were 329 men and 99 women convicted under federal statutes of whom 297 men and 96 women were offenders under the Narcotic Control Act.

2.—Persons Charged and Convicted of Indictable Offences, by Class of Offence, 1965 and 1966

Class of Offence	1965			1966			Increase or Decrease in Persons Convicted p.c.
	Persons Charged	Persons Convicted		Persons Charged	Persons Convicted		
		M.	F.		M.	F.	
	No.	No.	No.	No.	No.	No.	
Criminal Code							
Class I. — Offences against the Person	7,689	6,072	313	8,365	6,582	366	+8.8
Abduction and kidnapping.....	76	49	2	57	35	2	-27.5
Assault, causing bodily harm, common, on police and obstruction....	5,386	4,357	222	6,009	4,833	264	+11.3
Offences against females ¹	1,014	751	23	1,037	770	31	+3.5
Causing death by criminal negligence, ² manslaughter and murder.	208	134	7	198	130	12	+0.8
Attempted murder, causing bodily harm and danger.....	249	156	24	265	183	16	+10.6
Criminal negligence in operation of motor vehicle.....	41	27	1	39	37	—	+32.1
Duties tending to preservation of life.....	20	15	1	13	9	—	-43.8
Other offences against the person...	695	583	33	747	585	41	+1.6
Class II.—Offences against Property with Violence	8,614	7,860	167	8,676	7,817	148	-0.8
Breaking and entering a place, extortion and robbery.....	8,614	7,860	167	8,676	7,817	148	-0.8
Class III.—Offences against Property without Violence	23,328	17,634	3,647	26,203	19,414	4,525	+12.5
Fraud and false pretences.....	2,749	2,136	300	2,981	2,264	356	+7.6
Having in possession.....	2,607	2,109	120	2,742	2,260	124	+7.0
Theft.....	17,972	13,389	3,227	20,480	14,890	4,045	+14.0
Class IV. — Malicious Offences against Property	1,182	976	46	1,428	1,191	59	+22.3
Arson and other fires.....	134	97	10	176	131	8	+29.9
Other interference with property...	1,048	879	36	1,252	1,060	51	+21.4
Class V.—Forgery and Other Offences Relating to Currency ...	1,389	1,118	195	1,247	992	159	-12.3
Forgery and uttering forged documents.....	1,302	1,052	186	1,155	928	151	-12.8
Offences relating to currency.....	87	66	9	92	64	8	-4.0
Class VI.—Other Offences	3,934	3,053	348	4,545	3,616	373	+17.3
Driving while ability to drive is impaired.....	281	237	3	368	301	8	+28.8
Driving while intoxicated.....	31	28	—	21	20	—	-28.6
Gaming, betting and lotteries.....	632	509	51	889	766	70	+49.3
Keeping bawdy houses.....	212	31	160	177	31	136	-12.6
Various other offences.....	2,778	2,248	134	3,090	2,498	159	+11.5
Totals, Criminal Code	46,136	36,713	4,716	50,464	39,612	5,630	+9.2
Federal Statutes							
Narcotic Control Act.....	465	225	119	567	297	96	+14.2
Other statutes.....	61	54	5	49	32	3	-40.7
Totals, Federal Statutes	526	279	124	616	329	99	+6.2
Grand Totals	46,662	36,992	4,840	51,080	39,941	5,729	+9.2

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

² Includes causing death in the operation of a motor vehicle or otherwise.

Table 3 shows that 35.5 p.c. of the persons convicted of indictable offences in 1966 had not gone beyond elementary school grades in education, 53.4 p.c. were 24 years of age or younger, 30.3 p.c. were between the ages of 25 and 44, and 78.1 p.c. lived in urban centres. Of these offenders, 87.5 p.c. were males, 83.1 p.c. were born in Canada, 59.5 p.c. were single, 18.9 p.c. were recorded as labourers and 12.4 p.c. had no remunerative employment.

FEMALE OFFENDERS

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3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1965 and 1966

Item	1965	1966	Item	1965	1966
No.	No.	No.	No.	No.	No.
Total Persons Convicted	41,832	45,670	SEX		
TYPE OF OCCUPATION			Male.....	36,992	39,941
Agriculture.....	1,177	1,189	Female.....	4,840	5,729
Armed Services.....	237	261	EDUCATIONAL STATUS		
Clerical.....	1,244	1,348	Unable to read or write.....	346	287
Commercial and managerial.....	2,088	2,130	Elementary.....	16,168	16,196
Construction.....	4,169	4,296	High school.....	16,888	18,879
Finance.....	44	53	Superior.....	603	716
Fishing, trapping and logging.....	1,480	1,479	Grade not stated.....	1,340	1,335
Labourer.....	8,132	8,617	Not given.....	6,487	8,257
Manufacturing and mechanical.....	3,839	4,330	AGE		
Mining.....	612	719	16 to 19 years.....	13,450	14,722
Service—			20 to 24 years.....	8,942	9,675
Domestic.....	913	971	25 to 44 years.....	13,090	13,819
Personal.....	1,407	1,506	45 years or over.....	3,547	3,863
Professional.....	457	505	Not given.....	2,803	3,591
Public and protective.....	65	85	BIRTHPLACE		
Other.....	117	221	Canada.....	35,497	37,957
Student.....	3,948	4,337	British Isles and other Common-		
Transportation and communica-			wealth.....	842	833
tions.....	2,713	2,924	United States.....	288	376
Unemployed and retired (incl.			Europe.....	1,878	1,921
housewives).....	5,279	5,665	Asia.....	85	135
Not given.....	3,911	5,034	Other foreign countries.....	36	57
MARITAL STATUS			Not given.....	3,206	4,391
Single.....	25,389	27,190	RESIDENCE		
Married.....	10,640	11,496	Urban centres.....	32,747	35,667
Widowed.....	367	434	Rural districts.....	6,944	7,125
Divorced.....	436	454	Indeterminate.....	874	1,007
Separated.....	1,686	1,783	Not given.....	1,267	1,871
Not given.....	3,314	4,313			

Female Offenders.—There were 5,729 female offenders convicted of indictable offences in 1966 compared with 4,840 in 1965. Of these offenders, Ontario accounted for 2,180, Quebec for 1,443 and British Columbia for 817. The ratio of female offenders convicted to total persons convicted moved upward from 11.6 p.c. in 1965 to 12.5 p.c. in 1966, ranging from 4.8 p.c. in the Yukon and Northwest Territories to 14.3 p.c. in Quebec.

4.—Females Convicted of Indictable Offences, by Province, 1965 and 1966

Province or Territory	Females Convicted		Females Convicted to Total Persons Convicted	
	1965	1966	1965	1966
	No.	No.	p.c.	p.c.
Newfoundland.....	80	92	10.5	11.7
Prince Edward Island.....	9	4	5.1	3.7
Nova Scotia.....	109	136	7.5	9.0
New Brunswick.....	68	97	6.6	7.5
Quebec.....	1,010	1,443	11.1	14.3
Ontario.....	1,868	2,180	13.0	13.8
Manitoba.....	363	278	13.7	11.2
Saskatchewan.....	166	179	8.8	8.7
Alberta.....	452	487	10.7	10.8
British Columbia.....	705	817	11.9	12.1
Yukon and Northwest Territories.....	10	16	4.6	4.8
Canada	4,840	5,729	11.6	12.5

Multiple Convictions.—Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1962 to 1966. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1962-66

Item	1962	1963	1964	1965	1966
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences.....	5,669	6,244	6,085	5,754	6,032
3 offences.....	2,046	2,155	2,094	2,063	2,071
4 offences.....	1,023	1,164	1,052	1,045	1,016
5 offences.....	594	615	587	564	651
6 offences.....	389	407	412	399	425
7 offences.....	262	276	258	270	291
8 offences.....	194	217	209	213	208
9 offences.....	140	170	151	156	135
10 offences.....	118	123	121	138	116
11 to 20 offences.....	416	491	476	440	467
21 offences or over.....	151	169	151	158	153
Totals, Convicted of More than One Offence.....	11,002	12,031	11,596	11,200	11,565
Totals, Convicted of One Offence.....	27,661	30,883	30,501	30,632	34,105
Grand Totals.....	38,663	42,914	42,097	41,832	45,670

Disposition of Cases and Previous Convictions.—As shown in Table 1, p. 427, of all suspects before the courts for indictable offences in 1966, 89.4 p.c. were adjudged guilty. There was, however, considerable variation among the provinces in this respect, the proportion ranging from 87.0 p.c. in British Columbia to 98.6 p.c. in Newfoundland.

Table 6 shows that of the 45,670 persons convicted in 1966, 25.7 p.c. had no previous conviction, 13.2 p.c. had previously been found guilty of one offence and 30.0 p.c. had two or more earlier convictions; court records for the other 31.1 p.c. were not obtained. There is little change in these percentages from year to year.

6.—Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1965 and 1966

Item	1965	1966	Item	1965	1966
	No.	No.		No.	No.
Charged.....	46,662	51,080	Males convicted.....	36,992	39,941
Acquitted.....	4,305	4,237	Females convicted.....	4,840	5,729
Disagreement of jury.....	5	11	First conviction.....	10,966	11,734
Stay of proceedings.....	435	473	Second conviction.....	5,853	6,030
No Bill.....	23	21	Reiterated convictions.....	13,629	13,701
Detained because of insanity.....	62	52	Not given.....	11,384	14,205

8.—Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1966—concluded

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By Judge and Jury—concluded												
Disagreement of jury.....M. F.	— —	— —	— —	— —	— —	5 —	— —	3 —	— —	3 —	— —	11 —
Stay of proceedings.....M. F.	— —	— —	1 —	— —	— —	3 —	2 1	2 —	— —	15 1	2 —	25 2
No Bill.....M. F.	1 —	— —	1 —	— —	— —	19 1	— —	— —	— —	— —	— —	21 1
By a Judge without Jury—												
Convicted.....M. F.	4 —	14 —	32 —	9 —	791 46	369 33	47 1	66 3	263 16	105 17	13 2	1,713 118
Acquitted.....M. F.	— —	1 —	7 1	— —	233 20	138 17	16 —	25 2	89 7	41 6	7 —	557 53
Detained because of insanity.....M. F.	— —	— —	— —	— —	— 1	— —	— —	— —	— —	— —	— —	— 1
Stay of proceedings.....M. F.	— —	— —	— —	— —	— —	1 —	1 —	1 —	10 1	7 2	— —	20 3
By a Magistrate with Consent—												
Convicted.....M. F.	441 33	49 1	709 30	652 20	3,987 739	7,409 592	1,015 61	922 40	1,817 114	2,738 203	163 3	19,902 1,836
Acquitted.....M. F.	2 —	1 —	78 2	27 1	504 78	866 80	37 2	31 5	112 15	244 32	15 —	1,917 215
Detained because of insanity.....M. F.	4 —	— —	1 —	— —	11 1	5 —	— —	1 —	— —	5 1	— —	27 2
Stay of proceedings.....M. F.	— —	— —	— —	— —	1 —	4 —	71 4	3 —	1 1	182 35	— —	262 40
By a Magistrate, Absolute Jurisdiction—												
Convicted.....M. F.	243 58	39 3	614 105	522 77	3,753 648	5,493 1,538	1,120 216	854 134	1,937 354	2,941 592	127 11	17,643 3,736
Acquitted.....M. F.	3 —	1 —	58 11	15 1	179 17	805 113	48 7	75 7	111 28	217 41	8 1	1,520 226
Detained because of insanity.....M. F.	1 —	— —	1 —	— —	5 1	3 —	— —	1 —	— —	1 —	— —	12 1
Stay of proceedings.....M. F.	— —	— —	— —	— —	1 —	— —	83 13	— —	— —	82 34	— —	166 47
Totals, Persons Charged	795	110	1,694	1,339	11,185	17,946	2,773	2,218	4,890	7,759	371	51,080
Totals, Persons Con- victed	784	107	1,517	1,293	10,102	15,745	2,482	2,052	4,508	6,750	330	45,670

9.—Persons Charged and Convicted of Indictable Offences according to Trial Court, by Province, 1965 and 1966

Province or Territory and Item	1965					1966				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged.....	761	17	1	5	784	704	81	4	6	795
Convicted.....	740	17	1	3	761	694	81	4	5	784
Prince Edward Island—										
Charged.....	178	—	4	1	183	91	3	16	—	110
Convicted.....	173	—	4	1	178	89	3	15	—	107
Nova Scotia—										
Charged.....	1,511	9	77	28	1,625	1,593	16	40	45	1,694
Convicted.....	1,354	9	64	19	1,446	1,445	13	32	27	1,517
New Brunswick—										
Charged.....	1,012	10	31	12	1,065	1,308	7	14	10	1,339
Convicted.....	989	10	27	8	1,034	1,264	7	14	8	1,293
Quebec—										
Charged.....	6,866	1,619	1,498	147	10,130	7,916	2,009	1,115	145	11,185
Convicted.....	6,228	1,608	1,133	126	9,095	7,134	1,993	858	117	10,102
Ontario—										
Charged.....	15,500	63	699	121	16,392	16,836	72	913	125	17,946
Convicted.....	13,756	60	502	75	14,393	14,968	64	628	85	15,745
Manitoba—										
Charged.....	2,370	397	71	59	2,906	2,260	417	66	30	2,773
Convicted.....	2,162	383	50	48	2,643	2,002	410	49	21	2,482
Saskatchewan—										
Charged.....	1,884	6	96	42	2,028	2,069	4	98	47	2,218
Convicted.....	1,779	5	75	31	1,890	1,947	3	70	32	2,052
Alberta—										
Charged.....	4,173	14	49	290	4,526	4,468	22	60	340	4,890
Convicted.....	3,958	14	38	224	4,234	4,200	22	45	241	4,508
British Columbia—										
Charged.....	5,548	884	211	146	6,789	6,489	859	252	159	7,759
Convicted.....	4,846	859	142	94	5,941	5,626	848	170	106	6,750
Yukon and Northwest Territories—										
Charged.....	214	—	11	9	234	327	1	23	20	371
Convicted.....	201	—	8	8	217	303	1	15	11	330
Canada—										
Charged.....	40,035	3,019	2,748	860	46,662	44,061	3,491	2,601	927	51,080
Convicted.....	36,186	2,965	2,044	637	41,832	39,672	3,445	1,900	653	45,670

**Subsection 2.—Young Adult Offenders (16-24 Years)
Convicted of Indictable Offences**

Attention has been focused in recent years on the needs of the young adult offenders of from 16-24 years of age who constitute a promising field for modern reception and diagnostic facilities equipped with educational, trade training and other formative disciplines. The young men and women in this age group account for 18.7 p.c. of the total

population 16 years of age or over, but they form over half of the criminal population committing indictable offences. The group includes some of the most daring offenders who already may be experienced criminals as well as first offenders likely to be turned from crime by further education and training. There were 24,397 young adult offenders in 1966, an increase of 8.9 p.c. over the previous year.

10.—Young Adult Offenders, by Age Group, Sex and Province, 1965 and 1966

Year, Age Group and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1965												
16 - 17 years.....M.	156	26	277	175	1,574	2,344	414	257	622	985	19	6,849
F.	4	1	15	18	161	185	40	21	18	76	—	548
18 - 19 ".....M.	100	32	222	162	1,093	2,104	333	244	559	670	20	5,539
F.	14	—	12	8	88	181	51	26	63	69	2	514
20 - 24 ".....M.	158	28	319	239	1,868	2,638	471	380	874	1,095	40	8,110
F.	20	2	14	9	222	261	61	27	78	137	1	832
Totals, 1965	452	89	859	611	5,006	7,713	1,379	955	2,214	3,032	82	22,392
1966												
16 - 17 years.....M.	188	32	319	229	1,805	2,272	430	337	592	1,021	25	7,250
F.	18	—	22	10	186	206	28	23	48	100	1	642
18 - 19 ".....M.	99	15	276	246	1,097	2,274	367	341	651	821	37	6,224
F.	8	1	15	11	118	249	55	25	53	70	1	606
20 - 24 ".....M.	161	16	332	274	1,986	2,901	402	395	896	1,252	54	8,669
F.	18	—	27	9	289	340	39	34	96	150	4	1,006
Totals, 1966	492	64	991	779	5,481	8,242	1,321	1,155	2,336	3,414	122	24,397

11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1965 and 1966

Class of Offence	1965		1966	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code				
Class I.—Offences against the Person	2,583	94	2,794	108
Abduction and kidnapping.....	31	1	23	1
Assault, causing bodily harm, common, on police and obstruction.....	1,938	69	2,147	77
Offences against females ¹	300	2	305	8
Causing death by criminal negligence, ² manslaughter and murder.....	57	3	44	2
Attempted murder, causing bodily harm and danger.....	48	8	61	5
Criminal negligence in operation of motor vehicle.....	14	—	18	—
Duties tending to preservation of life.....	—	—	1	—
Other offences against the person.....	195	11	195	15
Class II.—Offences against Property with Violence	5,605	108	5,724	106
Breaking and entering a place, extortion and robbery.....	5,605	108	5,724	106
Class III.—Offences against Property without Violence	9,913	1,387	10,925	1,746
Fraud and false pretences.....	611	116	666	160
Having in possession.....	1,162	63	1,304	61
Theft.....	8,140	1,208	8,955	1,525

For footnotes, see end of table.

11.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1965 and 1966—concluded

Class of Offence	1965		1966	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code—concluded				
Class IV.—Malignous Offences against Property	634	17	756	25
Arson and other fires.....	38	4	66	3
Other interference with property.....	596	13	690	22
Class V.—Forgery and Other Offences Relating to Currency	433	91	375	79
Forgery and uttering forged documents.....	411	85	353	75
Offences relating to currency.....	22	6	22	4
Class VI.—Other Offences	1,256	142	1,459	150
Driving while ability to drive is impaired.....	21	—	41	1
Driving while intoxicated.....	4	—	1	—
Gaming, betting and lotteries.....	27	3	39	6
Keeping bawdy houses.....	8	68	11	71
Various other offences.....	1,196	71	1,367	72
Totals, Criminal Code	20,424	1,839	22,033	2,214
Federal Statutes				
Narcotic Control Act.....	69	54	106	39
Other statutes.....	5	1	4	1
Totals, Federal Statutes	74	55	110	40
Grand Totals	20,498	1,894	22,143	2,254

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

² Includes causing death in the operation of a motor vehicle or otherwise.

12.—Disposition of Sentences for Indictable Offences, by Sex, 1965 and 1966

Disposition of Sentences	1965				1966			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence.....	1,839	280	1,650	549	2,600	392	1,960	777
Probation.....	5,920	647	1,375	351	6,157	655	1,380	346
Fine.....	4,183	572	4,766	1,524	4,578	754	5,637	1,809
Gaol.....	5,913	299	6,458	427	6,113	364	6,629	54
Reformatory and training school....	1,330	69	460	42	1,497	79	532	55
Penitentiary.....	1,304	27	1,775	53	1,198	10	1,651	44
Death.....	9	—	10	—	—	—	9	—

Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction are triable by magistrates and justices of the peace under Part XXIV of the Criminal Code (SC 1953-54, c. 51) or under the provincial summary conviction Acts as the case may be. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges. In these cases, following arrest or summons to appear in court, the accused person must be tried by a magistrate or justice of the peace without the intervention of a jury. Such cases are heard in police court with a minimum of delay.

13.—Convictions for Summary Conviction Offences, by Type, 1965 and 1966

Type of Offence	1965	1966	Type of Offence	1965	1966
	No.	No.		No.	No.
Criminal Code	100,538	110,191	Federal Statutes—concluded		
Attempts, conspiracies, accessories, counselling.....	202	216	Food and Drugs.....	121	115
Attempt to commit suicide.....	383	414	Harbour Board and Merchant Seamen's.....	14,086	139
Bawdy house.....	392	282	Immigration.....	138	253
Causing disturbance by being drunk.....	3,661	3,763	Income Tax.....	6,170	6,460
Common assault.....	8,762	9,818	Indian—		
Communicating venereal disease.....	18	16	Intoxication.....	3,880	4,350
Contempt of court.....	26	30	Other.....	1,896	1,570
Corrupting morals.....	417	427	Juvenile Delinquents—		
Cruelty to animals.....	94	67	Adults who contribute to delinquency.....	1,733	1,552
Damage not exceeding \$50 and other interference with property.....	4,206	4,585	Incorrigibility.....	1,211	1,333
Disorderly conduct.....	17,028	19,953	Inducing child to leave home, etc.....	75	31
Duty of persons to provide necessities.....	2,164	1,803	Sexual immorality.....	328	793
Duty to safeguard dangerous places.....	34	25	Lord's Day.....	205	285
Fraudulently obtaining food or lodging.....	1,017	966	National Defence.....	101	235
Fraudulently obtaining transportation.....	173	158	Railway.....	837	717
Gaming, betting, lotteries.....	2,273	1,921	Unemployment Insurance.....	4,817	6,302
Intimidation.....	514	579	Weights and Measures.....	70	61
Killing or injuring bird or animal other than cattle.....	62	62	Other federal statutes.....	3,865	5,115
Motor Vehicle—			Provincial Statutes	1,245,797	1,395,435
Criminal negligence in operation.....	499	565	Children of Unmarried Parents.....	757	838
Dangerous driving.....	2,616	2,888	Deserted Wives and Children's Maintenance.....	8,077	6,900
Dangerous operation of vessel, etc.....	128	378	Game and Fisheries.....	6,297	6,673
Driving while impaired.....	27,656	29,852	Highway Traffic—		
Driving while disqualified.....	6,480	7,300	Driving without care.....	55,034	68,103
Driving while intoxicated.....	1,523	1,387	Other traffic.....	923,533	1,040,220
Failing to stop at scene of accident.....	5,575	6,529	Liquor Control—		
Motor vehicle equipped with smoke screen.....	13	17	Intoxication.....	123,113	127,856
Taking motor vehicle without consent.....	1,746	1,827	Other.....	96,844	117,868
Offensive weapons.....	1,178	1,199	Master and Servant.....	1,124	1,071
Personating peace officer.....	100	88	Medical, Dentistry and Pharmacy.....	124	110
Recognition, breach of.....	1,743	1,778	Mental Diseases.....	434	282
Vagrancy.....	5,740	6,330	Prairie and Forest Fire Prevention.....	145	67
Other Criminal Code.....	4,115	4,968	Protection of Children.....	2,535	3,201
Federal Statutes	43,029	32,186	Public Health.....	440	619
Customs.....	183	146	School Laws.....	268	377
Excise.....	2,320	1,732	Other provincial statutes.....	27,072	21,250
Fisheries.....	993	1,007	Municipal By-laws	336,835	403,784
			Intoxication.....	16,107	20,459
			Traffic.....	275,187	314,881
			Other.....	45,541	68,444
			Prohibited Parking	2,265,458	1,954,976
			Totals, Convictions	3,991,657	3,896,572

Subsection 4.—Appeals

Appeal is an important safeguard in Canada's legal system and the conviction of a judge and jury or a judge may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1966 there were 3,273 appeals in indictable cases disposed of by the courts, of which 178 were Crown appeals and 3,095 appeals of the accused. Of the Crown appeals 51 were from acquittal and 127 from sentence; of the appeals of the accused, 953 were from conviction and 2,142 from sentence. Appeals in summary conviction cases disposed of by the courts numbered 1,803 in 1966. Of these, 204 were appeals of the informant and 1,599 appeals of the accused. The informant appeals comprised 178 from acquittal and 26 from sentence and appeals of the accused comprised 1,448 from conviction and 151 from sentence.

Section 3.—Juvenile Delinquents

Juvenile Delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the Criminal Code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency.

The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. In the interests of uniformity, it has been the practice of the Dominion Bureau of Statistics to publish information about juvenile delinquents 16 years of age or over in the annual report on *Statistics of Criminal and Other Offences* and to publish data relating to those under 16 years of age in a report entitled *Juvenile Delinquents*. In 1966, 3,824 juveniles 16 and 17 years of age were found delinquent in those provinces where the upper age limit is under 17 or under 18 years of age.

Included in the statistics of juvenile delinquents are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency—the most serious—was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

14.—Juveniles brought before the Courts, by Province, and Total Dismissed and Delinquent, 1962-66

Province or Territory	1962	1963	1964	1965	1966	Percentage Change, 1965-66
	No.	No.	No.	No.	No.	
Newfoundland.....	494	523	556	638	701	+10.0
Prince Edward Island.....	60	66	32	50	43	-14.0
Nova Scotia.....	941	928	883	950	1,059	+11.5
New Brunswick.....	450	472	573	464	466	+ 0.4
Quebec.....	3,078	2,909	2,998	3,253	4,192	+28.9
Ontario.....	8,815	9,813	10,422	10,064	10,376	+ 3.1
Manitoba.....	1,014	909	976	1,070	1,329	+24.2
Saskatchewan.....	379	339	332	295	234	-20.7
Alberta.....	1,269	1,357	1,718	1,557	2,032	+30.5
British Columbia.....	2,157	2,570	2,940	2,634	2,946	+11.8
Yukon Territory.....	50	—	—	—	2	—
Northwest Territories.....	—	—	30	—	19	—
Canada.....	18,707	19,886	21,460	20,975	23,399	+11.6
Dismissed.....	843	776	612	527	528	+ 0.2
Adjourned <i>sine die</i>	1,256	1,554	1,483	2,096	2,561	+22.2
Delinquent.....	16,608	17,556	19,365	18,352	20,310	+10.7

18.—Juvenile Delinquents, by Group of Offence, and Ratio per 100,000 Population
7-15 Years of Age, 1957-66

Year	Delinquencies against the Person		Delinquencies against Property with Violence		Delinquencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delinquencies relating to Currency		Other Delinquencies		Total Convictions	
	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population
1957...	254	9	2,005	70	3,764	131	994	35	28	1	2,634	92	9,679	338
1958...	346	12	2,268	76	4,436	148	985	33	36	1	3,320	111	11,391	381
1959...	265	9	2,408	78	4,748	153	952	31	27	--	3,286	106	11,686	377
1960...	369	11	2,953	92	5,694	177	1,272	40	36	1	3,641	113	13,965	434
1961...	382	11	3,511	103	6,435	189	1,248	37	33	1	3,606	106	15,215	447
1962...	460	13	3,563	102	7,129	204	1,420	41	49	1	3,987	114	16,608	475
1963...	490	14	3,864	108	7,386	206	1,630	45	48	1	4,138	115	17,556	499
1964...	525	14	4,361	119	8,364	229	1,654	45	51	1	4,410	120	19,365	528
1965...	539	14	4,130	111	7,722	207	1,490	40	93	2	4,378	117	18,352	492
1966...	559	14	4,403	115	8,557	223	1,691	44	77	2	5,023	131	20,310	529

19.—Juvenile Delinquents classified by Type of Delinquency, 1962-66

Delinquency	1962	1963	1964	1965	1966
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence.....	7	6	1	4	2
Murder, attempt.....	2	1	2	1	1
Rape and attempt, sexual intercourse and incest.....	12	6	4	12	10
Indecent assault (male and female).....	127	101	134	114	101
Assault, causing bodily harm and danger.....	43	62	60	58	58
Common assault.....	209	280	278	307	337
Interfering with transportation facilities.....	—	—	5	2	—
Other offences against the person.....	60	34	41	41	49
Breaking and entering a place.....	3,427	3,817	4,246	4,037	4,322
Robbery and extortion.....	136	47	115	93	81
Theft and having in possession.....	6,787	7,100	8,004	7,669	8,493
False pretences and fraud and corruption.....	34	50	54	53	68
Arson.....	94	80	106	119	116
Other interference with property.....	1,326	1,550	1,548	1,371	1,575
Forgery and delinquencies relating to currency.....	49	48	51	93	77
Incorrigibility and vagrancy.....	652	1,057	789	844	640
Immorality.....	223	176	186	201	166
Various other delinquencies.....	3,420	3,141	3,741	3,333	4,213
Totals.....	16,608	17,556	19,365	18,352	20,310

20.—Percentages of Delinquent Boys and Girls, by Age Group, 1965 and 1966

Age Group	1965			1966		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7-12 years.....	24.3	12.0	22.7	23.1	14.9	21.9
13-15 ".....	75.6	87.8	77.2	76.3	84.7	77.5
Not given.....	0.1	0.2	0.1	0.6	0.4	0.6
Totals.....	100.0	100.0	100.0	100.0	100.0	100.0

21.—Age, Sex and School Grade of Delinquent Boys and Girls, 1966
(B=Boys; G=Girls)

Age	School Grades																Total Delinquents			
	Elementary										Secondary		Auxiliary		Not Given					
	1-4		5		6		7		8											
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
7 years.....	39	3	—	—	—	—	—	—	—	—	—	—	—	—	2	—	41	3		
8 ".....	159	6	—	—	—	—	—	—	—	—	—	—	1	—	10	1	160	7		
9 ".....	346	28	25	—	1	—	—	—	—	—	—	—	3	—	19	1	394	29		
10 ".....	404	35	220	21	38	3	6	3	1	—	—	—	3	—	34	6	706	68		
11 ".....	300	17	371	36	277	25	51	4	4	2	2	—	16	—	56	6	1,977	90		
12 ".....	193	15	316	32	599	72	407	61	67	13	7	3	24	1	80	6	1,693	203		
13 ".....	102	8	253	31	612	81	892	132	678	139	120	26	22	6	140	39	2,819	462		
14 ".....	61	11	146	19	432	47	960	140	1,392	265	1,084	227	58	7	314	89	4,447	805		
15 ".....	58	1	120	29	305	30	637	88	1,580	259	2,888	487	78	8	512	104	6,178	1,006		
Not given.....	—	—	2	—	1	—	—	—	—	—	5	1	—	—	102	11	110	12		
Totals.....	1,652	124	1,453	168	2,265	258	2,953	428	3,722	678	4,106	744	205	22	1,269	263	17,625	2,685		

22.—Disposition of Delinquents, by Type of Sentence, 1957-66

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Corporal Punishment		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
1957.....	460	4.7	3,822	39.5	300	3.1	2,261	23.4	63	0.7	1,563	16.1	1,202	12.4	1	—	7	0.1
1958.....	504	4.4	5,728	50.3	294	2.6	1,624	14.3	13	0.1	1,822	16.0	1,389	12.2	3	—	14	0.1
1959.....	236	2.0	6,151	52.6	412	3.5	1,810	15.5	9	0.1	1,678	14.4	1,381	11.8	—	—	9	0.1
1960.....	442	3.2	7,413	53.1	518	3.7	2,289	16.4	42	0.3	1,791	12.8	1,456	10.4	—	—	14	0.1
1961.....	544	3.6	7,341	48.2	644	4.2	2,148	14.1	89	0.6	1,974	13.0	2,466	16.2	—	—	9	0.1
1962.....	697	4.2	8,827	53.1	369	2.2	2,219	13.4	89	0.5	1,862	11.2	2,533	15.3	—	—	12	0.1
1963.....	977	5.6	8,292	47.2	462	2.6	2,460	14.0	99	0.6	2,043	11.6	3,180	18.1	—	—	43	0.3
1964.....	1,082	5.5	9,624	49.7	612	3.2	2,247	11.6	139	0.7	1,967	10.1	3,699	19.1	—	—	15	0.1
1965.....	773	4.2	10,021	54.6	550	3.0	2,133	11.6	80	0.4	1,925	10.5	2,845	15.5	—	—	25	0.1
1966.....	791	3.9	10,826	53.3	1,014	5.0	2,343	11.5	96	0.1	1,971	9.7	3,258	16.0	—	—	17	0.1

Section 4.—Correctional Institutions and Training Schools

Subsection 1.—Statistics of Correctional Institutions and Training Schools

Correctional institutions may be classified under four headings: (1) Penitentiaries—operated for adult offenders by the Federal Government in which, generally speaking, sentences of over two years are served; (2) Reformatories—operated for adult offenders by the provinces in which individual sentences of up to two years are served; (3) Common Gaols—operated for adult offenders by the provinces or counties in which sentences of up to two years can be served but in which, generally speaking, short-term sentences are served; and (4) Training Schools—operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province.

There is a limited amount of statistical information available with respect to these types of institution. "In-custody" figures shown in Table 23 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on

parole, deaths, pardons and releases on court order. In-custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not serving sentence and, for training school population, juveniles on placement.

Population figures in Tables 23 and 24 are for a given day of the year, which is Mar. 31 except for Quebec gaols where populations are counted as of Dec. 31. These figures represent, in effect, a yearly census of correctional institutions and, as such, are not indicative of the daily average population count. For instance, if an abnormal number of commitments is made to a certain institution on or just prior to Mar. 31, the result will be an unrepresentative population total for the institution in that year.

With regard to the fluctuations that might have occurred during the year between census days, the total population of correctional institutions has shown a general increase since Mar. 31, 1961; however, totals for each type of institution have recently shown a tendency to level off or decline slightly.

23.—Population in Penitentiaries, Years Ended Mar. 31, 1962-67

Item	1962	1963	1964	1965	1966	1967
	No.	No.	No.	No.	No.	No.
In custody at beginning of year.....	6,738	7,156	7,219	7,655 ¹	7,514	7,437
Received during year.....	5,541	6,539	6,439	5,852	5,991	7,128
Discharged during year.....	5,123	6,476	6,007	5,993	6,068	7,397
In custody at end of year.....	7,156	7,219	7,651	7,514	7,437	7,168

¹ Includes four females admitted to British Columbia penitentiary not counted in 1964.

24.—Populations in Reformatories and Gaols and in Training Schools, as at Mar. 31, 1962-67

Type of Institution	1962	1963	1964	1965	1966	1967
	No.	No.	No.	No.	No.	No.
Reformatories and Gaols—						
Reformatories for men.....	3,670	3,919	3,977	3,970	3,686	3,968
Reformatories for women.....	171	171	171	129	156	111
Common gaols.....	8,225	8,665	8,411	8,484	8,415	8,260
Totals, Reformatories and Gaols.....	12,066	12,755	12,559	12,583	12,257	12,339
Training Schools—						
Training schools for boys.....	2,435	2,466	2,662	2,706	2,545	2,478
Training schools for girls.....	1,090	1,072	1,416	1,332	1,215	1,127
Totals, Training Schools ¹.....	3,525	3,538	4,078	4,038	3,760	3,605

¹ Eight additional training schools reported in 1964-67 compared with previous years.

Subsection 2.—The Canadian Penitentiary Service*

The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected

* Prepared under the direction of A. J. MacLeod, Commissioner of Penitentiaries, Ottawa.

therewith. In the year ended Mar. 31, 1967, the federal penitentiary system consisted of six maximum security, 10 medium security and 14 minimum security institutions, all for males; one prison for women; one maximum security prison camp for males of the Freedomite Doukhobor Sect; one security institution for elderly recidivists; and three Correctional Staff Colleges.

The six maximum security institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at New Westminster, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., St. Vincent de Paul, Que., and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are held in the provincially operated institution at St. John's, under financial arrangements authorized by Sect. 14 of the Penitentiary Act (SC 1960-61, c. 53).

The medium and minimum security institutions and the camps receive inmates transferred from the maximum security (receiving) institutions on the basis of their suitability for special forms of training, including vocational training. Of the medium security institutions, three—Collins Bay Penitentiary, Joyceville Institution, and Warkworth Institution—are within a few miles of Kingston; the Federal Training Centre and the Leclerc Institution are close to St. Vincent de Paul; and the other institutions are located at Matsqui, B.C., Drumheller, Alta., Cowansville, Que., and Springhill, N.S.

Eight minimum security correctional camps are operated as extensions of a main institution in their respective areas. These are located at William Head and Agassiz, B.C.; Beaver Creek and Landry Crossing near Bracebridge and Petawawa, Ont.; Gatineau (Gatineau Park) and Valleyfield, Que.; Blue Mountain near Gagetown, N.B.; and Springhill, N.S. Six minimum security farm annexes operate as extensions of the penitentiaries at Dorchester, St. Vincent de Paul, Collins Bay, Joyceville, Stony Mountain and Prince Albert, respectively. There is also a medium security industrial satellite at St. Vincent de Paul.

The Prison for Women at Kingston, Ont., receives inmates transferred upon committal to penitentiary in any part of Canada.

The special security Prison Camp for Freedomites who have been sentenced to imprisonment in penitentiary is located near Agassiz, B.C., and is called Mountain Prison. When the sentences of the female Doukhobor prisoners were completed, part of Mountain Prison was converted to an institution for older recidivists.

A new maximum security institution was under construction during 1967-68 at Ste. Anne des Plaines, Que. New medium security institutions were opened at Drumheller, Alta., Warkworth, Ont., and Springhill, N.S., and a Special Correctional Unit at St. Vincent de Paul, Que.

Three Correctional Staff Colleges—one at Kingston, one at St. Vincent de Paul and one at New Westminster—are operated for the training of recruits and for the advanced training of penitentiary officers. The Kingston College serves English-speaking or bilingual officers, the St. Vincent de Paul College is primarily for French-speaking officers from all parts of Canada, and the Western Staff College trains the recruits for the institutions in the Western Region. These Staff Colleges provide excellent facilities for Service-wide conferences of institutional heads and other special groups of officers.

The Headquarters of the Service is located in Ottawa. Regional directorates have been established at New Westminster, B.C., Kingston, Ont., and St. Vincent de Paul, Que., for the Western, Ontario and Quebec areas, respectively.

Subsection 3.—The National Parole System*

Parole is a means by which an inmate in any correctional institution in Canada, if he gives definite indication of his intention to reform, can be released from prison. The purpose of parole is the protection of society through the rehabilitation of the inmate.

* Revised by T. G. Street, Chairman, National Parole Board, Ottawa.

It is essential for the public to understand that the true purpose of punishment should be the reformation of the offender and not just vengeance or retribution but, since the Parole Board is as much concerned with the protection of society as with the reformation of the inmate, it recognizes that the welfare of an individual inmate must not be allowed to impair the success of the parole system or the public safety.

It is the function of the Parole Board to select those inmates who show some sincere intention to reform and to assist them in doing so by granting parole. The inmate then is allowed to serve the remainder of his sentence in society, but under supervision. He is subject to restrictions and conditions as to his conduct and behaviour, designed for his welfare and the protection of others. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence but only with the problem of deciding in each case whether or not there is chance of reformation. Parole is not a matter of clemency and is not granted on compassionate or humanitarian grounds but only if there appears to be at least a reasonable chance that the inmate will lead a law-abiding life. The treatment and training program in the institution is a vital part of the correctional process and parole is an extension of this training outside the institution. It is not a matter of pampering prisoners but of trying to give as many of them as possible a chance to rehabilitate themselves.

The National Parole Board, composed of a chairman and four members (one woman), was formed in January 1959. It operates under the authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959, replacing the Ticket-of-Leave Act. The Board has jurisdiction over any adult inmate of any prison in Canada convicted of an offence against an Act of the Parliament of Canada; it also has jurisdiction to revoke or suspend any sentence of whipping or any order made under the Criminal Code prohibiting any person from operating a motor vehicle.

The decision of the Board with respect to any one inmate is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with him. Reports are also obtained, when available, from a psychologist or psychiatrist and, if necessary, a community investigation is conducted to secure as much information as possible about his family and background, his work record and his position in the community. From these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life.

An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such an application at the institution, or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, investigation is begun and the results presented to the Board for decision. All applications and reports are processed by the Parole Board staff at Ottawa but regional officers, stationed at 22 centres across the country, interview applicants for parole in their respective areas, giving them an opportunity of making verbal representations to a representative of the Board. The regional officers submit to the Board a report of each interview with an assessment of the inmate's suitability for parole.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the regional officer. If he violates the conditions of his parole or commits a further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted. If a parolee commits an indictable offence, his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence plus any new term to which he is sentenced for the commission of the new offence. The regional officer may also issue a Warrant of Suspen-

sion and have a parolee placed in custody if it is necessary to prevent a breach of any term or condition of the parole. These officers are thus able to exercise effective and adequate control over all parolees in their respective areas.

During the nine years of its operation the Parole Board has granted parole (of all types) to 20,252 inmates. During the same period 2,201 parolees have been returned to prison. There were 1,096 paroles revoked for misbehaviour or the commission of a minor offence, and 1,105 paroles were forfeited for the commission of an indictable offence. The proportion of parole successes to the number of parole releases was 89.2 p.c.

Section 5.—Police Forces and Crime Statistics

Organization of Police Forces.—The police forces of Canada are organized in three groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provincial police forces—the Provinces of Ontario and Quebec have their own provincial police forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) municipal police forces—most urban centres of reasonable size maintain their own police force or engage the services of the provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Company and the National Harbours Board have their own police forces.

The Royal Canadian Mounted Police.—The Royal Canadian Mounted Police is a civil force maintained by the Federal Government. It was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories and, in recognition of its services, was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The Force is under the control of the Solicitor General of Canada and is headed by a Commissioner who holds the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from the non-commissioned ranks. The Force has complete jurisdiction in the enforcement of the federal statutes. By arrangement between the federal and provincial governments, it enforces the provincial statutes and the Criminal Code in all provinces exclusive of Ontario and Quebec and under special agreement it polices some 140 municipalities (as of Sept. 1, 1968). It is the sole police force in the Yukon and Northwest Territories, where it also performs various administrative duties on behalf of certain departments of the Federal Government. It maintains liaison officers in London and Washington and represents Canada in the International Criminal Police Organization, which has headquarters in Paris.

Of the Force's 18 divisions, 12 are actively engaged in the work of law enforcement, as are some 46 subdivisions and 709 detachments. The six remaining divisions are "Headquarters", "Depot", "N" and "P" which are maintained as training centres, and "Marine" and "Air", which support the operations of the land divisions. A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. Focal point of the Force's criminal identification work is the Headquarters Identification Branch; its services, together with those of the divisional and subdivisional units and the five Crime Detection Laboratories, are available to police forces throughout Canada. The Force operates the

Canadian Police College at which Force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

The uniform strength of the Force in July 1968 was 8,789, including marine constables and special constables, at which time it maintained some 2,636 motor vehicles, 22 aircraft, 58 ships and boats, 121 sleigh dogs, 27 police service dogs and 137 horses.

Quebec Provincial Police Force.—The Quebec Provincial Police Force is responsible for the maintenance of peace, order and public safety in the province, and for the prevention and investigation of criminal offences and of violation of all laws of the province.

The province is divided into two almost equal parts known as the Montreal Division and the Quebec Division. The Montreal Division has five subdivisions with headquarters at Granby, Hull, Montreal, Rouyn and Sherbrooke; the Quebec Division has four subdivisions with headquarters at Baie Comeau, Chicoutimi, Quebec and Rimouski. There are 112 detachments throughout the province—62 in the Montreal Division and 50 in the Quebec Division. The Force at the end of 1966 had 2,440 regular members—officers, non-commissioned officers and constables.

The Quebec Provincial Police Force is under the command of a Director General who is assisted by an officer holding the rank of Deputy Director General. Each Division is headed by an Assistant Director. A commissioned officer is in command of each subdivision.

Ontario Provincial Police Force.—The Ontario Provincial Police, a Crown force, is the third largest deployed force on the North American Continent, having a total authorized strength of more than 4,450 (1968) uniform and civilian personnel.

The Force is administered from general headquarters at Toronto by a Commissioner who has the rank and status of a Deputy Minister under the Attorney General. Other senior executive officers include two Deputy Commissioners and five Assistant Commissioners. The Force has two principal sides—Operations and Services—which are administered under the supervision of the Deputy Commissioner Operations and the Deputy Commissioner Services, respectively. In turn, five Divisions at the next level are administered by their respective Assistant Commissioners—Assistant Commissioner Field, Assistant Commissioner Traffic, Assistant Commissioner Administration, Assistant Commissioner Staff Services and Assistant Commissioner Special Services.

Specialized Branches under the Special Services Division include Auto Theft, Criminal Investigation, Anti-rackets, Intelligence, Anti-gambling, Liquor Laws Enforcement and Precious Metals Theft.

For policing and administration purposes, the province is divided geographically into 17 districts. In the field, there are 198 detachments controlled through 17 district headquarters located at Chatham, London, Burlington, Niagara Falls, Downsview, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste. Marie, South Porcupine, Port Arthur and Kenora. Sixteen municipalities are policed under special contract.

Under provisions of the Ontario Police Act, the Force is responsible for: (1) enforcing federal and provincial statutes in those areas that are not required to maintain their own police department; (2) maintaining a traffic patrol on the more than 10,000 miles of King's Highways and 65,000 miles of secondary county and township roads; (3) enforcing the Liquor Licence Act and the Liquor Control Act for Ontario; (4) maintaining a Criminal

Investigation Branch and other specialized branches to assist all other forces in the investigation of major crimes; and (5) assisting other forces by providing additional manpower in the event of emergencies.

Under the Staff Services Division, the Central Records and Communications Branch offers 24-hour-seven-day-week service to all police departments in Ontario on such matters as criminal records, fingerprint records, missing and wanted persons, dry cleaning and laundry mark identification, stolen and recovery property lists.

The Force operates one of the largest frequency modulation radio networks in the world, with 100 fixed radio stations and more than 1,260 radio-equipped mobile units including motorcycles, marine units and aircraft. It also operates the Ontario Police Forces telecommunications network connecting all 17 districts as well as other police departments on a local, national and international basis. Extensions to routine police service are provided by canine, SCUBA and marine-bush rescue units strategically located throughout the province and available to other law enforcement agencies upon request.

In addition to regular constable recruitment, the Force has a cadet program making it possible for qualified young men to create for themselves a career in a long-established police force. An important development in the progress of this Crown force occurred when legislative enactment provided that all ranking officers, from inspector up to and including the Commissioner, receive the Queen's Commission in the same manner as the Armed Forces.

Municipal Police Forces.—Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships that have a population density and a real property assessment sufficient to warrant maintenance of a police force, and have been so designated by Order in Council, are made responsible for the adequate policing of their municipalities.

Uniform Crime Reporting.—The present method of reporting police statistics (police administration, crime and traffic enforcement statistics), known as the Uniform Crime Reporting Program, was started on Jan. 1, 1962, and was developed by the Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police Committee on Uniform Crime Reporting. Previously, the definitions and methods for collecting police statistics were not uniform and the data could not be expressed with consistency on a national, provincial or local basis but, with the development of the Uniform Crime Reporting Program, meaningful statistical aggregates became possible. The police were supplied with a manual of instructions containing standard definitions for the reporting of police administration, crime and traffic enforcement statistics on specially designed statistical forms to be submitted to the DBS.

Police Personnel.—As shown in Table 25, police personnel in Canada numbered 42,541 at the end of 1967, including 35,881 sworn-in policemen, 6,163 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables, etc., and 497 cadets. The ratio of police personnel per 1,000 population was 2.1 and the ratio of police was 1.8. Provincial ratios for police personnel ranged from 1.1 to 4.6 per 1,000 persons and for police only from 1.0 to 4.3. In 12 selected metropolitan areas there were 15,204 police personnel including 13,226 police and 1,978 cadets and other full-time employees. Total municipal police personnel numbered 24,368 made up of 23,100 in municipal forces, and 1,197 Royal Canadian Mounted Police and 71 provincial police under municipal contracts.

There were three policemen killed by criminal action in 1967 and seven policemen lost their lives accidentally while on duty. Police transport facilities at the end of the year included 6,903 automobiles, 1,018 motorcycles, 720 other motor vehicles, 415 boats, 22 aircraft, 221 horses and 78 service dogs.

25.—Police Personnel, by Type of Force, 1966 and 1967

Force	1966				1967			
	Police	Cadets	Other Full-Time Employees	Total	Police	Cadets	Other Full-Time Employees	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Royal Canadian Mounted Police—								
Actual strength.....	7,920	—	2,149	10,069	8,563	—	2,176	10,739
Authorized strength.....	8,116	—	2,238	10,354	8,360	—	2,430	10,790
Engagements.....	964	—	353	1,317	991	—	519	1,510
Retirements and other separations.....	416	—	276	692	373	—	354	727
Ontario Provincial Police—								
Actual strength.....	3,075	68	699	3,842	3,243	73	769	4,085
Authorized strength.....	3,141	68	744	3,953	3,341	73	802	4,216
Engagements.....	405	45	255	705	341	52	261	654
Retirements and other separations.....	127	31	174	332	173	47	191	411
Quebec Provincial Police—								
Actual strength.....	2,364	25	615	3,004	2,605	56	689	3,350
Authorized strength.....	2,511	25	615	3,151	2,811	75	689	3,575
Engagements.....	308	25	100	433	287	46	140	473
Retirements and other separations.....	107	—	97	204	46	15	66	127
Municipal Police (excl. RCMP and OPP contracts)—								
Actual strength.....	19,462	383	2,309	22,154	20,258	368	2,474	23,100
Authorized strength.....	20,182	374	2,411	22,967	20,985	356	2,510	23,851
Engagements.....	2,341	294	652	3,287	2,135	272	653	3,060
Retirements and other separations.....	1,376	222	546	2,144	1,490	271	513	2,274
Canadian National Railways Police—								
Actual strength.....	598	—	25	623	570	—	26	596
Authorized strength.....	601	—	25	626	574	—	27	601
Engagements.....	68	—	2	70	84	—	2	86
Retirements and other separations.....	49	—	1	50	112	—	1	113
Canadian Pacific Railway Company Police—								
Actual strength.....	539	—	26	565	532	—	27	559
Authorized strength.....	549	—	26	575	548	—	27	575
Engagements.....	89	—	6	95	79	—	6	85
Retirements and other separations.....	75	—	6	81	86	—	5	91
National Harbours Board Police—								
Actual strength.....	111	—	—	111	110	—	2	112
Authorized strength.....	114	—	—	114	114	—	2	116
Engagements.....	13	—	—	13	8	—	1	9
Retirements and other separations.....	3	—	—	3	9	—	1	10
Totals, All Forces—								
Actual strength.....	34,069	476	5,823	40,368	35,881	497	6,163	42,541
Authorized strength.....	35,214	467	6,059	41,740	36,733	504	6,487	43,724
Engagements.....	4,188	364	1,368	5,920	3,925	370	1,582	5,877
Retirements and other separations.....	2,153	253	1,100	3,506	2,289	333	1,131	3,753

26.—Police Personnel, by Sex and Type of Force, 1966 and 1967
(Actual strength)

Force	Police		Cadets		Other Full-Time Employees		Totals	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
1966								
Royal Canadian Mounted Police.....	7,920	—	—	—	756	1,393	8,676	1,393
Ontario Provincial Police.....	3,075	—	68	—	330	360	3,473	369
Quebec Provincial Police.....	2,353	11	25	—	347	268	2,725	279
Municipal Police (excl. RCMP and OPP contracts).....	19,281	181	372	11	1,439	870	21,092	1,062
Canadian National Railways Police.....	592	6	—	—	10	15	602	21
Canadian Pacific Railway Company Police.....	539	—	—	—	12	14	551	14
National Harbours Board Police.....	111	—	—	—	—	—	111	—
1967								
Royal Canadian Mounted Police.....	8,563	—	—	—	761	1,415	9,324	1,415
Ontario Provincial Police.....	3,243	—	73	—	360	409	3,676	409
Quebec Provincial Police.....	2,594	11	56	—	391	298	3,041	309
Municipal Police (excl. RCMP and OPP contracts).....	20,082	176	359	9	1,510	964	21,951	1,149
Canadian National Railways Police.....	565	5	—	—	10	16	575	21
Canadian Pacific Railway Company Police.....	532	—	—	—	11	16	543	16
National Harbours Board Police.....	110	—	—	—	2	—	112	—

Crime Statistics.—Table 27 shows the number of crimes dealt with by the police in 1967, including offences under the Criminal Code, federal statutes, provincial statutes and municipal by-laws; offences cleared by charge and otherwise; and the number of adults and juveniles charged. Offences reported or known to the police but proved unfounded are not shown in the table but numbered 59,247, including 51,155 under Criminal Code classifications, 2,456 under federal statutes, 4,137 under provincial statutes and 1,499 under municipal by-laws, excepting traffic.

During 1967, the police reported 70,402 offences committed against the person, including 281 murders, 9,747 rape and other sexual offences, and 60,179 offences of wounding and other assaults (not indecent); all offences against the person resulted in the charging of 26,842 persons 1,800 of them juveniles. During the year there were 471,866 cases of robbery, theft and other offences against property, resulting in 95,980 persons charged, 29,541 of them juvenile males and 2,688 juvenile females; 41,497 cases of fraud, false pretences, forgery, etc.; 2,055 of prostitution; 2,495 gaming and betting; 4,116 offensive weapons; and 193,640 other Criminal Code offences. In addition to the 35,226 federal statute offences reported, 2,584 were under the Narcotic Control Act and 290 under the controlled drug part of the Food and Drugs Act; these two classifications resulted in the charging of 1,875 persons.

Provincial and territorial fire marshals and commissioners reported 2,177 suspected or known incendiary offences, of which 673 were proved unfounded; 395 offences were reported cleared by charge, resulting in 278 adults and 184 juveniles being charged.

The number of motor vehicles stolen was 44,209 (an estimated 600 per 100,000 vehicles registered); 41,649 or 94.2 p.c. of these vehicles were recovered. Police were asked to locate 21,746 missing adults and 33,412 missing juveniles; 20,893 adults and 32,941 juveniles were found. The number of drownings reported by police was 1,374.

27.—Crime Statistics, by Type of Offence, 1966 and 1967

Year and Offence	Actual Offences ¹	Offences Cleared		Persons Charged			
		By Charges	Other- wise	Adults		Juvéniles	
				Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.	No.
1966							
Criminal Code	702,809	175,570	89,074	128,895	13,954	35,636	4,083
Murder, capital and non-capital.....	220	181	26	158	26	17	—
Attempted murder.....	131	108	12	98	9	3	—
Manslaughter.....	28	24	—	18	9	1	—
Rape.....	652	348	126	463	—	23	—
Other sexual offences.....	8,140	3,171	1,280	2,591	35	386	38
Wounding.....	972	524	218	405	68	55	5
Assaults (not indecent).....	53,533	20,712	21,077	18,991	1,145	942	144
Robbery.....	5,710	1,852	354	2,082	78	437	19
Breaking and entering.....	102,132	19,223	5,290	12,777	261	8,654	350
Theft, motor vehicle.....	39,655	8,840	2,429	6,405	130	3,610	84
Theft over \$50.....	75,841	10,017	4,539	7,637	804	2,180	190
Theft \$50 or under.....	190,480	29,826	17,977	15,567	4,482	10,663	2,029
Have stolen goods.....	6,074	5,426	322	3,659	254	944	73
Fraud.....	37,798	19,840	4,185	8,983	1,143	311	64
Prostitution.....	2,166	1,975	24	425	1,556	16	24
Gaming and betting.....	2,285	1,942	90	2,788	165	4	—
Offensive weapons.....	3,651	2,739	448	2,262	78	257	7
Other Criminal Code ¹	173,341	48,822	30,677	43,586	3,711	7,133	1,056
Federal Statutes²	34,569	28,266	2,623	23,593	1,902	784	474
Narcotic Control Act.....	1,184	510	105	601	185	5	2
Controlled Drugs under the Food and Drugs Act.....	241	19	23	16	—	—	—
Provincial Statutes¹	290,096	264,902	10,114	236,517	19,196	7,317	1,813
Municipal By-laws¹	65,990	45,587	12,483	38,827	4,337	2,567	275
1967							
Criminal Code	786,071	185,085	98,426	142,358	15,136	39,741	4,135
Murder, capital and non-capital.....	281	185	66	173	15	9	—
Attempted murder.....	139	111	7	112	6	6	—
Manslaughter.....	56	51	1	47	4	1	1
Rape.....	773	395	129	528	—	27	—
Other sexual offences.....	8,974	3,203	1,338	2,891	37	354	28
Wounding.....	1,030	574	192	434	75	48	—
Assaults (not indecent).....	59,149	21,934	23,700	19,719	1,001	1,177	149
Robbery.....	7,212	2,074	362	2,392	124	398	15
Breaking and entering.....	119,394	21,681	6,503	19,774	316	10,035	321
Theft, motor vehicle.....	44,768	9,595	2,572	6,901	127	4,389	96
Theft over \$50.....	86,889	10,040	4,615	7,494	940	2,504	180
Theft \$50 or under.....	208,945	30,952	20,424	16,025	5,091	11,116	1,999
Have stolen goods.....	6,658	5,889	413	4,232	335	1,099	77
Fraud.....	41,497	20,434	5,039	9,367	1,191	317	54
Prostitution.....	2,055	1,836	11	357	1,487	5	11
Gaming and betting.....	2,495	2,226	82	3,329	248	28	—
Offensive weapons.....	4,116	3,087	530	2,670	118	273	6
Other Criminal Code ¹	193,640	50,818	32,824	45,913	4,021	7,955	1,198
Federal Statutes²	35,226	27,861	3,449	22,888	1,891	792	497
Narcotic Control Act.....	2,584	1,317	90	1,317	376	91	37
Controlled Drugs under the Food and Drugs Act.....	290	50	18	44	5	3	2
Provincial Statutes¹	296,504	272,583	12,352	247,304	19,382	7,109	1,772
Municipal By-laws¹	69,532	50,524	12,007	41,763	5,833	2,230	146

¹ Except traffic.² Except traffic, Narcotic Control Act and Food and Drugs Act.

During 1967, police departments in Canada reported 93,235 Criminal Code traffic offences, resulting in 61,940 persons charged, 1,346 of them females. Total charges reported under federal statutes numbered 13,647, provincial statutes 1,589,965 and municipal by-laws 365,183, excluding parking violations; the latter numbered 4,669,881, most of them reported by municipal police. There are certain traffic offences under provincial statutes which are almost identical to those under the Criminal Code. These are shown separately for 1966 and 1967 in Table 28.

The number of traffic accidents reported was 631,396, of which 4,488 involved fatalities, 110,076 resulted in injuries, 358,510 involved property damage of over \$100 and 158,322 involved damage of \$100 or less. There were 5,411 persons killed in traffic accidents, including 3,913 drivers and passengers, 1,299 pedestrians, 162 cyclists and 37 others; persons injured numbered 161,698.

28.—Traffic Enforcement Statistics, by Type of Offence, 1966 and 1967

Year and Offence	Actual Offences	Offences Cleared		Persons Charged	
		By Charge	Other- wise	Male	Female
	No.	No.	No.	No.	No.
1966					
Criminal Code	89,751	62,577	4,506	58,111	1,319
Criminal Negligence—					
Causing death.....	222	221	1	218	7
Causing bodily harm.....	72	63	6	61	5
Operating motor vehicle.....	370	337	18	318	5
Failing to stop or remain at scene of accident.....	35,536	9,902	4,003	7,914	308
Dangerous driving.....	4,793	4,225	149	3,932	55
Driving while intoxicated.....	3,093	3,038	15	3,014	43
Driving while impaired.....	36,514	35,757	252	34,512	828
Driving while disqualified.....	9,151	9,034	62	8,142	68
Federal Statutes (except parking).....	..	..	..	9,698	
Provincial Statutes (except parking).....	..	..	..	1,509,598	
Municipal By-laws (except parking).....	..	..	..	373,218	
Provincial Statutes¹	46,404	38,951	1,225	37,063	1,780
Failing to stop or remain at scene of accident.....	10,083	5,115	763	4,704	175
Dangerous driving.....	33,881	32,190	435	30,615	1,583
Driving while disqualified.....	2,440	1,646	27	1,744	22
1967					
Criminal Code	93,235	64,696	4,564	60,594	1,346
Criminal Negligence—					
Causing death.....	209	204	—	203	2
Causing bodily harm.....	69	66	1	63	—
Operating motor vehicle.....	369	342	9	323	6
Failing to stop or remain at scene of accident.....	36,849	9,875	3,926	7,816	328
Dangerous driving.....	4,867	4,405	138	4,229	54
Driving while intoxicated.....	3,450	3,407	19	3,335	80
Driving while impaired.....	37,688	36,824	429	35,829	778
Driving while disqualified.....	9,734	9,573	42	8,796	98
Federal Statutes (except parking).....	..	..	..	13,647	
Provincial Statutes (except parking).....	..	..	..	1,589,965	
Municipal By-laws (except parking).....	..	..	..	365,183	
Provincial Statutes¹	52,204	45,218	1,432	42,257	2,425
Failing to stop or remain at scene of accident.....	10,659	5,028	879	4,473	286
Dangerous driving.....	39,867	38,541	540	36,145	2,125
Driving while disqualified.....	1,678	1,649	13	1,639	14

¹ Provincial traffic offences almost identical to those under the Criminal Code.

CHAPTER X.—LAND USE AND RENEWABLE RESOURCE DEVELOPMENT*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Trends in Planned Resource Development

Canada's era of settlement ended as the northern areas of the Prairie Provinces came under cultivation in the 1930s. Government policies, previously directed mainly toward the large-scale utilization of natural resources, have evolved toward concern with land use and the socio-economic circumstances of people involved in renewable resource-based industries. Undiscriminating land settlement policies and ill-advised individual choices had resulted in the settlement of some submarginal land throughout Canada, but most notably in the southern areas of Alberta and Saskatchewan, creating requirement for land-use adjustment even before settlement had been completed. Far more significant than this, however, is the technological revolution in agriculture which has occurred during the past three decades concurrently with improvements in transportation and a strong trend toward the concentration in urban centres of a growing population.

Accompanying these changes has been an altered pattern of land use resulting from individual response to economic factors; but the rate of such adjustment has not been concomitant to the magnitude of the socio-economic dislocation in rural areas. Because of this situation, and because of increased concern with forest management, water pollution control, recreational resources and wildlife management, the trend has been for a vast increase in public decision-making with respect to resource management and use. Implicit in this has been the need for improved legislative-administrative organization relative to natural resources.

Early federal investigations of significance to the general problem of organization for resource use were: the Senate of Canada Special Committee on Land Use, established in 1957 and continuing until 1963; the House of Commons Standing Committee on Mines, Forests and Waters; and the National Conference on Reconstruction held in 1945. Notable among several provincial government activities along similar lines is the annual British Columbia resources conference.

One of the most important responses to this need was the "Resources for Tomorrow" Conference held in 1961 to permit examination of problems of resource use and of develop-

* Revised in the office of the Canadian Council of Resource Ministers, Montreal, Que.

ing an organizational framework suited to the modern requirement for integrated, comprehensive resource-use planning for social and economic development. Subsequent to this Conference, the Canadian Council of Resource Ministers, composed of one representative from each province and one from the Federal Government, was established to perform a similar function on a continuing basis, with the aid of a Montreal-based staff.

One of the major specific concerns of the Council has been water resource management. Relevant activities have included a major conference on pollution, held in the autumn of 1966 for the purpose of formulating realistic guidelines to assist federal, provincial and municipal governments in developing programs to meet the challenge of pollution. An investigation was made by the Council of the administration of water resources in Canada; a report was published in 1965 and updated in 1968. A major workshop seminar on water took place in Victoria, B.C., in the autumn of 1968.

In keeping with its general concern for optimal use of available resources, the Council has done investigative and liaison work to ensure that fundamental data are available to guide the allocation of resources to outdoor recreation and has prepared other documents that have assisted in developing liaison between and within governments. One such study was undertaken on the administration of outdoor recreation in Canada. As part of its role in information-gathering, the Council maintains liaison with international bodies concerned with natural resources, and participates in international programs such as the International Hydrological Decade and the International Biological Program.

Constitutionally, administration and disposition of natural resources rest mainly with the provincial governments. Under the British North America Act, fisheries were under federal jurisdiction and the federal and provincial governments shared legislative authority with respect to agriculture, international and interprovincial waters, etc., with federal legislation taking precedence over provincial legislation should conflict arise; however, subsequent interpretations of the Act have established most aspects of control of resources as being matters of provincial jurisdiction. As well, in the years following Confederation, certain provinces by agreement assumed varying degrees of responsibility for administering the fisheries legislation and other federal resources legislation. Within this general framework, the Federal Government has taken certain steps to establish a national resources policy, to co-ordinate the activity of the various federal departments concerned with resources and relevant social and economic problems, to undertake or share in research, and to provide initiative and financial assistance in the establishment of programs of resource adjustment and development. Also, provincial governments have moved significantly to accommodate their administrative structures to the need for integrated, planned resource adjustment and development. Aspects of this trend to accommodate legislative-administrative organization to emerging needs will be apparent in the following descriptions of federal and federal-provincial agencies and programs. In addition, a great number of provincial programs have been instituted or strengthened, furthering the trend toward integration of activities relative to renewable natural resources.

Federal activity in resource conservation programs began before the turn of the century, starting in 1877. This included the work of the now long-disbanded Department of the Interior in the field of surveying and development of water resources in Western Canada. There have been numerous programs under the International Boundary Waters Treaty Act of 1911 undertaken by the International Joint Commission established to fulfil the provisions of the treaty and the confirming Act. Later programs included those conducted under the Prairie Farm Rehabilitation Act which was enacted in 1935 to aid in the rehabilitation of drought-stricken areas of the prairies, the work on the eastern seaboard conducted under the Maritime Marshland Rehabilitation Act of 1948, water development projects under the terms of the Canada Water Conservation Assistance Act of 1953, projects under the Atlantic Development Board Act of 1962, the broad and comprehensive resource development and adjustment programs being undertaken under the terms of the Agricultural and Rural Development Act of 1966 (formerly Agricultural Rehabilitation and Development Act of 1961), and the Fund for Rural Economic Development Act in 1966. Over

this period many projects of varying nature and scope have been undertaken under legislation such as the above and under the terms of reference of the federal and provincial government departments and agencies concerned with resource development—all toward the basic objective of achieving more effective utilization of Canada's land and water resources and the provision of a greater degree of economic stability and equitability for the rural areas of the country.

Section 2.—Federal Agencies Concerned With Resource Use*

Numerous agencies of the Federal Government have a more or less direct concern with renewable resources. Functions vary from academic research to direct manipulation of resources in certain geographical areas. Direct action, however, is limited mainly to areas under federal jurisdiction—the Northwest Territories, Indian reservations, limited federal forest preserves, National Parks, certain international parks and waterways, certain aspects of fisheries, matters relative to public health, navigation, and certain aspects of agriculture. More usual by far than direct action by the Federal Government are federal-provincial agreements under which the Federal Government shares the costs of programs. Such aid is often conditional on the province agreeing to carry out the program in accordance with criteria established by the Federal Government. The capacity of the Federal Government to establish cost-sharing programs is inherent in its broad fiscal powers and in its research and data-gathering programs that provide a basis for broader assessment of issues and alternatives.

Federal agencies whose activities impinge fairly directly on renewable resource development and use are as follows:—

- CANADA DEPARTMENT OF AGRICULTURE—Research Branch, Economics Branch, Prairie Farm Rehabilitation Administration, and Information Division
- DEPARTMENT OF FISHERIES—Conservation and Protection Service, Resource Development Service, Information and Consumer Service, and Economics Service
- DEPARTMENT OF FORESTRY AND RURAL DEVELOPMENT—Directorate of Program Co-ordination, Information and Technical Services Division, Forest Products Research Laboratory, ARDA Administration, Maritime Marshlands Rehabilitation Administration, and Eastern Rockies Forest Conservation Board
- DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT—Council of the Northwest Territories, Natural and Historic Resources Branch (including the Canadian Wildlife Service), Northern Administration Branch, and Indian Affairs Branch
- DEPARTMENT OF PUBLIC WORKS—Harbours and Rivers Engineering Branch, Development Engineering Branch and Economics Studies Branch
- DEPARTMENT OF TRANSPORT—Marine Works Branch, Marine Hydraulics Branch, and Meteorological Branch
- DEPARTMENT OF NATIONAL HEALTH AND WELFARE—Occupational Health Division, and Public Health Engineering Division
- DEPARTMENT OF FINANCE—Economic Analysis and Government Finance Division, Resources and Development Division, and a Division concerned with Taxation, Federal-Provincial Relations and Pensions and Social Insurance
- DEPARTMENT OF VETERANS AFFAIRS—Veterans' Land Administration
- DEPARTMENT OF ENERGY, MINES AND RESOURCES—Four Departmental Sectors are concerned with mines and geosciences, mineral development, energy development, and water, including the Geological Survey of Canada, Surveys and Mapping Branch, Marine Sciences Branch, Inland Waters Branch, and Policy and Planning Branch
- NATIONAL RESEARCH COUNCIL OF CANADA
- NATIONAL ENERGY BOARD
- ECONOMIC COUNCIL OF CANADA
- ATLANTIC DEVELOPMENT BOARD.

* As at December 1968, before the Government Reorganization Act 1969 was passed (see Appendix).

Various Crown corporations, credit agencies, advisory committees and boards, and quasi-governmental organizations also have interests in the fields of resource development, including:—

FARM CREDIT CORPORATION
 CANADIAN COMMITTEE ON FRESHWATER FISHERIES RESEARCH
 FISHERIES RESEARCH BOARD OF CANADA
 NORTHERN CANADA POWER COMMISSION
 ADVISORY COMMITTEE ON NORTHERN DEVELOPMENT
 ADVISORY COMMITTEE ON WATER USE POLICY
 CENTRAL MORTGAGE AND HOUSING CORPORATION
 NATIONAL HARBOURS BOARD
 ST. LAWRENCE SEAWAY AUTHORITY
 NORTHERN TRANSPORTATION COMPANY
 INTERDEPARTMENTAL ADVISORY COMMITTEE ON FORESTRY STATISTICS
 INTERDEPARTMENTAL CO-ORDINATING COMMITTEE FOR ARDA
 CANADIAN COUNCIL ON RURAL DEVELOPMENT
 INTERDEPARTMENTAL COMMITTEE ON RESOURCES
 NATIONAL COMMITTEE FOR THE INTERNATIONAL HYDROLOGIC DECADE
 CANADIAN COMMITTEE OF THE INTERNATIONAL BIOLOGICAL PROGRAM.

The Dominion Bureau of Statistics has, of course, functions relevant to nearly all aspects of the national life, including resources. The above agencies are not identified with a particular department and function more or less autonomously but are usually associated with a Minister of the Crown for purposes of reporting to Parliament (see pp. 108-110). Although each of these agencies carries out programs bearing on the use and development of natural resources, direct unilateral action is unusual except relative to lands and waters under the jurisdiction of the Federal Government. Major exceptions are the Prairie Farm Rehabilitation Administration programs and significant federal programs for the conservation and development of the various fisheries resources.

Major items of federal legislation relative to renewable resources include:—

The Department of Agriculture Act
 The Prairie Farm Rehabilitation Act
 The Farm Credit Act
 The Department of Fisheries Act
 The Forestry Development and Research Act
 The Agricultural and Rural Development Act
 The Fund for Rural Economic Development Act
 The National Parks Act
 The Migratory Birds Convention Act
 The International River Improvements Act
 The Dominion Water Power Act
 The Canada Water Conservation Assistance Act
 The Atlantic Provinces Power Development Act
 The Navigable Waters Protection Act
 The Veterans' Land Act
 The Economic Council of Canada Act
 The National Energy Board Act
 The National Harbours Board Act
 The St. Lawrence Seaway Authority Act
 The Resources and Technical Surveys Act
 The Fisheries Development Act.

Section 3.—International Boards and Commissions

The continental context of Canadian resource management is implicit in the purposes of the various international boards and commissions in which Canada participates. Of the 35 or more such boards and commissions, some 25 are concerned with water and most of the remainder have to do with fisheries.

THE INTERNATIONAL JOINT COMMISSION was established to fulfil the provisions of the International Boundary Waters Treaty of 1909 between the United States, Great Britain and Canada. Three commissioners were appointed by the President of the United States and three by the Government of Canada. The Commission deals with the use, obstruction and diversion of boundary waters and rivers crossing the International Boundary. It conducts investigations on water use problems with international implications and reports its findings with recommendations to both governments.

International boards of control which report to the International Joint Commission are: a 10-member International St. Lawrence Board of Control, concerned with levels of Lake Ontario and the regulation of outflow from the lake; a two-member St. Croix Board, concerned with water levels and supervision of dam construction; the Lake of the Woods Board, the Lake Superior Board, the Rainy Lake Board and the Kootenay Board, all of which are concerned with water levels; a two-member Columbia River Board, concerned with the effects of the Grand Coulee dam; a four-member Souris River Board, concerned with allocation of water; and a five-member Niagara Board, concerned with levels of Grass Island Pool and the Lake Erie ice boom. Functions similar to those of the Boards are carried out by two accredited officers relative to measurement and apportionment of waters of the St. Mary and Milk Rivers. Also reporting to the International Joint Commission are five international engineering boards for the Saint John, St. Croix, Souris and Red, Pembina and Columbia Rivers. A seven-member Technical Advisory Board on Air Pollution is concerned with air pollution by ships plying the Detroit River. An Advisory Board on Control of Pollution of Boundary Waters, reporting to the International Joint Commission, is concerned with the connecting channels of the Great Lakes, and other boards concerned with pollution are: the Advisory Board on Pollution Control-St. Croix River, the International Red River Pollution Board, the International Lake Erie Water Pollution Board and the International Lake Ontario-St. Lawrence Water Pollution Board. The eight-member International Great Lakes Levels Board, concerned with investigation and study of water levels of international or boundary waters, also report to the International Joint Commission.

THE INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION, composed of four members each from Canada, the United States and Japan, operates to fulfil the terms of the International Convention for the High Seas Fisheries of the North Pacific Ocean, the objective of which is to achieve maximum sustained yield in non-territorial waters by co-ordination of the studies necessary to determine appropriate application of treaty principles. THE GREAT LAKES FISHERIES COMMISSION, composed of two national sections of three members each, formulates and co-ordinates research programs and recommends programs for the eradication or control of sea lamprey populations. Responsibility for Canada's treaty obligations is shared by arrangement between the Federal Government and the Government of Ontario. THE NORTHWEST ATLANTIC FISHERIES COMMISSION operates under the International Convention for the Northwest Atlantic Fisheries signed by Canada, the United States, the United Kingdom, France, Spain, Denmark, Portugal, Iceland, Norway, Italy, East Germany and the Soviet Union. All contracting governments are represented on the Commission and panels have been established with jurisdiction over defined areas of particular interest to some signatories. The Commission has no regulatory powers but conducts scientific investigations and recommends measures to maintain stocks of fish. THE NORTH PACIFIC FUR SEALS COMMISSION operates under the Interim Convention on Conservation of North Pacific Fur Seals signed by Canada, the United States, Japan and the Soviet Union, undertaking research, recommending enforcement measures

required to eliminate pelagic sealing on the high seas, and overseeing the apportionment of skins from the Pribilof, Commander and Robben Islands. THE INTERNATIONAL WHALING COMMISSION, composed of representatives of Australia, Brazil, Argentina, France, South Africa, the United States, the United Kingdom, Canada, Norway, New Zealand, Iceland, Japan, Panama, Mexico and Denmark, has power to amend whaling rules and regulations of the International Convention, and to recommend new regulations with respect to the conservation and use of the resource. THE ROOSEVELT-CAMPOBELLO INTERNATIONAL PARK COMMISSION is concerned with the administration and development of the Campobello Island estate of the late Franklin D. Roosevelt as an international park.

Section 4.—Federal and Federal-Provincial Resource Development Programs

Subsection 1.—Water Development

Since 1935, the Prairie Farm Rehabilitation Administration (PFRA) has provided engineering and financial assistance for some 91,000 small dams and dugouts (small artificial ponds for water collection) to supply water for livestock, irrigation and domestic use. In the main, such works serve individual farmers but some serve groups of farmers or communities. The PFRA also provides free engineering services and contributes toward the cost of construction of community projects on larger watersheds.

Six minor irrigation projects in Saskatchewan provide water for 125,000 acres of land. Major irrigation projects include the St. Mary Irrigation Project undertaken jointly in 1946 by the Federal Government and the Government of Alberta to irrigate approximately half a million acres. The Bow River Project, also in Alberta, is being renovated and extended by the PFRA to yield an irrigation potential of 240,000 acres. The South Saskatchewan River Development Project, undertaken by the PFRA and completed late in the summer of 1967, involved the building of a main dam 210 feet high and 16,700 feet long—the largest rolled earth dam in Canada and one of the largest in the world. Located between the towns of Outlook and Elbow, this dam will create a reservoir 140 miles long with a capacity, when filled, of 8,000,000 acre feet of water (usable storage of 2,700,000 acre feet). The project will provide water to irrigate 500,000 acres of land, the power potential is 475,000 kilowatts, and the artificial lake will have considerable recreation potential. A second, smaller dam adjacent to the height of land between the South Saskatchewan and the Qu'Appelle Rivers will divert water into the Qu'Appelle-Assiniboine system to provide much-needed water supplies for irrigation and the considerable urban areas of the watershed. The cost of developing the main reservoir was \$117,000,000, of which the provincial government contributed \$25,000,000.

Land reclamation projects have been carried out by the PFRA in Manitoba along the Saskatchewan and Pasquia Rivers near The Pas, the Assiniboine River between Portage la Prairie and Headingley, at various points in the Interlake Region, and along the Northwest Escarpment. The Assiniboine River project includes the creation of a reservoir near Shellmouth and construction of a diversion canal near Portage la Prairie to carry floodwaters to Lake Manitoba.

Under the provisions of the Atlantic Development Board Act of 1962, amended in 1963 and 1966, a \$150,000,000 Atlantic Development Fund was established to support projects which would contribute to the growth and development of the economy of the Atlantic region. The Act also requires the Board, in consultation with the Economic Council of Canada, to prepare an over-all co-ordinated plan for the promotion of the economic growth of the region. Among the projects initiated during the Board's first years of operation were a number relative to water use for power production and for industry, the most notable being a \$20,000,000 grant toward the \$120,000,000, 600,000-kilowatt Mactaquac dam in New Brunswick and a similar grant toward Newfoundland's \$88,000,000, 225,000-kilowatt (first stage) Bay d'Espoir hydro-electric project. The Board also assisted in develop-

ing water supplies to meet the needs of industries—mainly fish processing plants—in some 35 communities, and committed \$2,000,000 toward abatement of industrial pollution in inland waters of the region. As part of its planning activities, the Board engaged consultants to carry out a \$1,500,000 study on the supplies of water in the region and the demands that are likely to be made upon them up to 1981 and beyond. (See also Chap. XXIV, Sect. 6, Subsect. 2.)

Under the Canada Water Conservation Assistance Act of 1953, which enables federal participation up to 37½ p.c. of the cost of dams and other major water projects undertaken by the provinces, seven water control programs—the Halton region, Metropolitan Toronto region, and the Upper Thames River conservation programs in Ontario, the Red River Community Dyking program in Manitoba, and the Alberni, North and West Vancouver, and Hastings Creek flood control schemes in British Columbia—are being assisted. The over-all cost of these programs is estimated at \$42,000,000, of which the Federal Government is committed to \$16,500,000.

Other federal and federal-provincial programs and agencies concerned with water are: the recently completed Greater Winnipeg Floodway program, to construct a 30-mile floodway past Winnipeg at a total estimated cost of \$63,000,000, of which the Federal Government will share about \$43,700,000; the Prairie Provinces Water Board, to recommend an allocation of water from interprovincial streams; the Saskatchewan-Nelson Rivers Basin Board, the four-year \$15,000,000 water supply study of the Saskatchewan-Nelson Rivers



Five towers on the now completed Gardiner Dam on the South Saskatchewan River contain water-flow control machinery and power is flowing from the plant at the foot of the dam. A system of canals and storage reservoirs ensures a supply of water from the lake that extends 140 miles above the dam for the first block of irrigated land on the east side of the river and for mines and communities south and east of Saskatoon.

basin; the Atlantic Tidal Power Programming Board to carry out studies for the development of the power potential of the tides of the Bay of Fundy; a co-ordinated study of Ontario rivers flowing into James Bay and Hudson Bay, to assess the quantity, quality and present and future requirements for these waters, and suggest alternative possibilities for their use; a 10-year Fraser River agreement between British Columbia and the Federal Government to provide flood protection on the Fraser Delta; and a considerable number of varied hydrologic and water-quality studies conducted by the Department of National Health and Welfare, the National Research Council, the Department of Transport, the Department of Energy, Mines and Resources, the Department of Fisheries and Forestry, the new Department of Regional Economic Expansion, and several other agencies.

In 1967 a milestone was reached in the area of co-operative water research with the establishment of the Canada Centre for Inland Waters at Burlington, Ont. Three federal agencies are responsible for the development of the centre—the Department of Energy, Mines and Resources, the Fisheries Research Board, and the Department of National Health and Welfare. The centre is designed for interdisciplinary research into such problems as pollution, fluctuating water levels, and water allocation. It will bring together representatives from governments, industries and universities both in co-operative research and in the planning of programs for the centre.

Finally, in the face of divided jurisdiction in the area of water resources and the increasing demand for and desirability of comprehensive, multi-purpose river-basin development, the Federal Government is planning to introduce new water resources legislation under the title of the Canada Water Act. This legislation should do much to establish the basis for federal-provincial co-operation and for the delineation of a national water policy.

Subsection 2.—Lands, Forests and Wildlife

The Prairie Farm Rehabilitation Act of 1935 provided for rehabilitation of areas subject to drought and wind erosion in the Prairie Provinces and in 1937 was amended to broaden its scope to include land utilization and resettlement. In the main, the PFRA's land-use programs have involved the establishment of community pastures on land sub-marginal for cereal crop production, and over the years this program has resulted in the establishment of 90 operating community pastures, with four more under construction, totalling 2,500,000 acres, at a total cost of \$11,000,000. The PFRA also operates a tree nursery at Indian Head in Saskatchewan which distributes up to 10,000,000 trees yearly free to farmers for farm and field shelterbelts.

The Agricultural Rehabilitation and Development Act, proclaimed in 1961, arose out of recognition of a national interest in achieving better land use, improving the viability of farm units at present uneconomic, and of improving employment and income opportunities in rural areas. In many areas of Canada, income is unacceptably low and land use faulty or inefficient. To some considerable degree these economic, social and conservation problems have been caused by farm mechanization which places smaller, less-mechanized farmers at a disadvantage; a notable symptom of this is the decrease in the number of farms in Canada from about three quarters of a million in 1931 to less than half a million (431,000 in 1966).

The Act, amended in 1966 as the Agricultural and Rural Development Act and supplemented by the Fund for Rural Economic Development Act of 1966, is enabling legislation intended to be complementary and supplementary to existing federal and provincial legislation in respect of renewable resources and rural social and economic development; to aid in correlation and expansion of existing programs; and to fill gaps. As such, it has considerable potential as an instrument for programs of alternate land use, soil and water conservation, development of rural income and employment opportunities, and for research. ARDA is a federal-provincial program which operated from its inception to Mar. 31, 1965 under a federal-provincial General Agreement, and after that time under the Federal-Provincial Rural Development Agreement covering the period 1965-70. Under the General Agreement, ARDA approved projects involving a federal share totalling \$34,517,000 of

which \$13,484,000 was expended during the period. The federal share is usually in the order of 50 p.c. of total cost. The Federal-Provincial Rural Development Agreement 1965-70 provides for the expenditure of \$125,000,000 during that period. In addition, \$300,000,000 is provided under the Fund for Rural Economic Development Act to finance major projects in special rural development areas.

To the end of March 1968, \$135,233,000 had been spent on 1,051 projects under the second ARDA agreement. The federal share of this was \$65,269,000. Examples of ARDA projects are the creation of a comprehensive development plan for the Edson area of Alberta, the development of irrigation and water supply in British Columbia, the provision of community pastures in Saskatchewan, and small projects on river-course development in Quebec. Four projects for comprehensive regional development are at present

Federal and provincial pollution control agencies have required the pulp and paper industry, through research and changed processing, to tackle the air and water pollution resulting from its operations.

Work on the problem of air pollution from kraft mills, being conducted by the Pulp and Paper Research Institute of Canada, includes studies of new processes that will eliminate the malodorous sulphur compounds in the exhaust gases. →

A plastic pipeline, being floated into place, will carry effluent from the kraft mill at Pictou Harbour, N.S., to a large lagoon where it can be settled and treated before being discharged.



under way—the Northeast and the Mactaquac projects in New Brunswick, the Gaspé, Lower St. Lawrence, Magdalen Islands project in Quebec, and the Interlake project in Manitoba. Three additional studies are under consideration—one on Prince Edward Island, one on northeastern Nova Scotia and one on the west coast of Newfoundland.

Since 1935 co-operative Soil Surveys staffed by soil specialists from federal and provincial governments and universities, and supported by all senior governments, have done extensive soil classification work. The Soil Surveys have mapped most of the agricultural land in Canada, classifying soils according to their inherent characteristics. In the Canada Land Inventory under the ARDA administration, further land classification is being done. The Inventory will map present land use and assess land capability for such different uses as agriculture, forestry, recreation and wildlife in and adjacent to the settled portions of Canada. The vast amount of information obtained will be stored on computer tapes, analysed and published in map or other form in such a way that the Inventory will become a working tool in resource planning and rural development programs throughout Canada. Approximately 100 agencies of the 11 senior governments are included in the Inventory, as well as numerous universities, non-government organizations and private companies or individuals. By late 1968, the present land use phase of the Inventory was almost completed and substantial progress had been achieved in the agriculture, forestry, wildlife and recreation phases. Capability maps at a scale of 1:250,000 may be obtained from the Queen's Printer as they become available.

In addition, other federal agencies and federal and federal-provincial programs are concerned with land and land-based resources. The Department of Indian Affairs and Northern Development engages in such diverse activities as the administration of National Parks, the administration of the resources of the Yukon and Northwest Territories and the administration of wildlife, including a considerable research program relative to wildlife and the administration of the Migratory Birds Convention Act. Among the programs are: the Wildlife Inventory Program in which joint studies are carried out informally, e.g., the waterfowl inventory conducted by the Federal Government, the United States Fish and Wildlife Service, Newfoundland and the five westernmost provinces; the caribou inventory by the Federal Government and the Governments of Alberta, Saskatchewan, Manitoba, Quebec and Newfoundland; the Trans-Canada Highway compounds and picnic areas program established in 1958 without Ontario and Quebec; a significant program of acquisition of wetlands waterfowl habitat areas; and Fur Conservation Agreements between the Federal Government and Ontario, Manitoba and Saskatchewan for the construction of water control works, mainly to improve muskrat and migratory bird habitat. The Roads to Resources program, carried out under agreements with the provinces made between 1958 and 1960, is a substantial federal-provincial program involving construction of access roads in Canada's "pioneer fringe". Forest products research, a joint federal-provincial-industry program of spraying to control budworm infestation of spruce forests in New Brunswick, and various other programs of research and forest stand improvement are in effect.

Notwithstanding the magnitude of these federal and federal-provincial programs, and the large number of federal agencies concerned with resource use and development in Canada, it should be noted that the provincial governments assume a role which, in total, is many times larger than that of the Federal Government.

CHAPTER XI.—AGRICULTURE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Agricultural Trends and Highlights in 1968

The Canadian farmer continues to become more efficient in the production of the raw material for food and feed to fulfil much of the requirements of the Canadian population and assist with those of other countries. Canada exports approximately \$1,800,000,000 worth of farm products each year to some 130 countries, and in 1967 retained its position as the fourth largest exporter of such products.

Experience has demonstrated that a healthy agricultural industry is essential to the health of the Canadian economy. Even though the importance of agricultural exports has declined relative to other exports, the impact of farm production on industrial employment has steadily expanded. Manpower required on the farms themselves has fallen with the advance of mechanization but labour used in the industries associated with farm production has grown rapidly. The farm machinery industry employs more than 12,000 workers who receive close to \$70,000,000 annually in pay; the feed industry employs about 8,800 workers receiving annually about \$40,310,000 and a fair proportion of payrolls in the petroleum, rubber, automotive, hardware, paint and electrical plants are based on farm customers. The country's many manufacturing plants engaged in the processing of foods of Canadian origin employ an estimated 215,000 persons.

During the past decade (1956-66) the number of farms in Canada declined from 575,015 to 430,522 but the average farm size increased from 302.5 acres to 404 acres and total productivity on the farm rose by some 67 p.c. In the five years 1961-66, the capital value of all farms rose almost 50 p.c. to \$19,000,000,000 and in the same period the number of farms with sales in excess of \$15,000 a year doubled to 50,800.

Efficiency in farm production at the primary level is passed on to the customer; it is estimated that 22 p.c. of the take-home pay of Canadians is spent on food, which is probably

the lowest percentage in the world and especially significant when account is taken of the high standard of food consumed. The hourly pay of a factory worker in 1967 purchased far more food in 1967 than it did 20 years earlier. Conversely, the percentage of the consumer dollar accruing to the farmer has been declining and average farm incomes have not increased as have those of workers in other sectors. For this reason the federal treasury maintains a price support policy to guard against sudden price changes that could put the farmer out of business and bolsters this with crop insurance and long-term loans for farmers.

In 1967 the index of farm production was 13 p.c. below the record level of 182 reached in 1966, the decline being attributed to a substantially smaller prairie grain crop and to lower output of potatoes, sugar beets, flaxseed, cattle and dairy products. On the other hand, cash receipts from farming operations reached a high of \$4,379,000,000 in 1967, a figure 3.3 p.c. above the previous record set in 1960, attributable to higher returns from tobacco, cattle, calves and dairy products and greatly increased participation payments on previous years' grain crops. Net income was, of course, considerably smaller than this; it was estimated at \$1,529,000,000, 1.5 p.c. below the average for 1962-66 and 21.2 p.c. below the all-time high of 1966. This net income takes into consideration the value of changes in farm-held inventories of livestock and field crops between the beginning and the end of the year. Realized net farming income, which takes no cognizance of such changes, was \$1,664,000,000, only 4.1 p.c. below 1966.

Farm operating expenses and depreciation charges advanced, partly because of the higher prices paid by farmers for goods and services. Shipments of manufactured livestock and poultry feeds increased again and prices also rose. Petroleum product prices and expenditures for machinery repairs and parts were up as were wage rates in agriculture. The farmers' outlay for debt servicing continued upward.

The Federal Government encouraged farmers to seek unity in their representations for solution of agricultural problems and to use producer marketing board machinery to improve their lot. A federal commission on the operation of the farm machinery industry and another seeking to define the objectives of the agricultural industry were at work. With these probes into the future the Government also accented the need for more research to be brought to bear on current production and marketing problems. The successful beginnings of the Canadian Dairy Commission promised an end to burdensome dairy product surpluses and a higher income for dairy farmers.

Agricultural Highlights in 1968

In 1968 the Canada Department of Agriculture laid the foundations for many basic changes—both international and national.

On the international scene, 21 nations agreed to shift the emphasis from price support programs to policies that would promote basic structural changes in the agricultural industry, a move that could reverse the trend to spiralling increases in product subsidies and import restrictions and should benefit Canadian agriculture, especially in the export market.

Canada began the year by pledging \$21,000,000 toward the World Food Programme for 1969 and 1970, one quarter in cash and the remainder in foodstuffs. On the national scene, several policy and assistance changes were made.

A federal-provincial cost-sharing program of crop insurance for farmers in Quebec Province was approved, the Federal Government to pay half the cost of the farmer's insurance premiums and share the administration costs of the scheme protecting forage and grain crops for livestock feeding.

Construction was started in March on a \$3,500,000 research laboratory at Harrow, Ont., and the new \$1,700,000 Vineland Research Centre for control of fruit pests was opened in May.

Importation of breeding cattle from France and Switzerland was continued with the objective of creating self-sustaining herds of a type that will benefit the beef industry in this country; permits for bringing in 238 head were issued. Federal assistance was given to potato growers in compensation for two years of low prices. Through the Agricultural Stabilization Board, growers were given a \$25-an-acre subsidy up to a maximum of \$400. A deficiency payment of 27.9 cents a pound was made for certain grades of wool marketed in the year ended Mar. 31, 1968; \$924,000 was shared by 18,000 producers. The price support program for lamb and wool for 1968-69, aimed at encouraging greater production, set new levels at \$18.80 a hundredweight for lamb and 60 cents a pound for wool.

The Canadian Dairy Commission program for 1968-69 consisted of continued market price supports for major dairy products and a direct subsidy to manufacturing milk and cream shippers under quotas established by the CDC. Together they provided support for the farmer equal to \$4.85 per hundredweight of milk at the factory. The cost of exporting surplus dairy products was charged to producers through a deduction made in advance from their gross subsidy, to emphasize the necessity of limiting production to domestic market needs. Producers excluded from the quota system because of low production will receive a phasing-out payment. The quota policy for 1968-69 permitted increased deliveries of milk by 37,000 small and medium manufacturing milk and cream shippers who exceeded their quotas in the previous year, the object being to help them build up more profitable units. Farmers who made no deliveries on their quotas were not given quotas for the current year and those whose quotas were as high as 10,500 pounds of butterfat level were not given additional quotas.

The Agricultural Stabilization Board announced a price support of 34 cents a dozen for Grade A Large eggs in a program that included Extra Large and Mediums. The support price applied to a maximum of 10,000 dozen eggs and a minimum of 1,000 dozen marketed in the year. The Board purchased eggs to help maintain the price obtained by producers and then converted the eggs to powder for use in the World Food Programme.

A grant of \$60 an acre based on 1967 plantings was approved for payment to Ontario sugar-beet growers to assist them in changing to other crops following the closure of sugar



Provincial and federal officials at the Agricultural Outlook Conference held in Ottawa late in 1968. At these conferences, sponsored annually by the Canada Department of Agriculture, experts outline the production and price outlook for the coming year.

refinery facilities. Sugar-beet production elsewhere in Canada was supported at a national average level of \$15.98 per standard ton to protect growers against serious declines in world prices.

In June, long-term loans were made available to fur farmers under the Farm Credit Act, mainly to assist mink breeders to compete more effectively in the sale of furs.

Changes in the Record of Performance program for cattle allowed for the entry of about 10,000 unregistered cattle into the program and regulations were changed to allow the use of several milk-measuring devices in pipeline operations.

A new federal grading system for hogs, to be implemented on Jan. 1, 1969, was announced following consultations with the Canadian Swine Council and the Meat Packers Council of Canada. The change placed special emphasis on a higher percentage of lean pork, promising greater rewards to the producer of high-quality hogs and a better product for the consumer. The beef industry began a review of its grading system which could result in equally important changes.

Major changes in the Record of Performance testing system for swine were recommended by the National Advisory Board for ROP Swine, endorsed by all provinces and put into effect in September. The new policy meant phasing-out the litter test and adopting a Boar Performance test (back fat thickness and evaluation of weight gain to a specific age). It also introduced a sire progeny test at test stations and made it available to breeders of unregistered stock of identifiable ancestry. All changes were designed to assist breeders to select within their breeding herd for qualities best meeting the requirements of the new grading system.

A computerized National Farm Management System, under development by the Federal Government in co-operation with the provinces and universities, will go on a volume test basis in 1969. It is intended to assist farmers in keeping and analysing their records to improve their management practices and incomes.

The Farm Credit Act and the Farm Improvement Loans Act were amended by Parliament to increase loan maximums and interest rates were tied to the Government's cost of obtaining money.

A value for duty was placed on United States corn imports, effective Oct. 30, 1968, ensuring that Ontario corn prices would not fall below the American support price.

Section 2.—Federal Government in Relation to Agriculture*

The Canada Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines, Agriculture and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Department of Indian Affairs and Northern Development.

* Prepared (September 1968) under the direction of S. B. Williams, Deputy Minister of Agriculture, Ottawa.

Subsection 1.—Services of the Canada Department of Agriculture

The activities of the Canada Department of Agriculture (CDA) fall into three broad groups: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests and the registration of chemicals and other materials used to achieve that end and toward the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover some of the sphere of soil and water conservation, price stability, provision of credit, rural rehabilitation and development, and crop insurance and income security in the event of crop failure.

The Department has five main Branches—Research, Health of Animals, Economics, Production and Marketing, and Administration—and its organization includes a number of smaller units—the Agricultural Stabilization Board which is a departmental Crown corporation (see p. 469), the Agricultural Products Board, Crop Insurance (p. 470), and the Information Division. Agencies closely allied with the Department and responsible to the Minister of Agriculture are the Farm Credit Corporation (p. 473), the Canadian Dairy Commission (p. 470), the Board of Grain Commissioners (Part II of Chapter XXI), and the Canadian Livestock Feed Board (p. 475).

Research Branch.—The research activities of the Department are undertaken mainly by the Research Branch at some 55 centres across the country, although important contributions are also made by the Economics Branch (p. 468), the Health of Animals Branch (p. 467), and the Grain Research Laboratory operated by the Board of Grain Commissioners for Canada (p. 467). About 1,000 research workers are employed by the Department and their specialties run the gamut of scientific agriculture from genetics to engineering. Most of the research is directed from Research Branch executive headquarters at the Central Experimental Farm in Ottawa. Also located there are the statistical, engineering and analytical chemistry research services, together with six of the eight institutes for research on animals, food, entomology, cell biology, plants, soils, biological control and pesticides. Throughout the 10 provinces there are 26 research stations, 13 experimental farms, a laboratory and a number of substations.



Hercules, a new Durum wheat licensed in early 1969, was developed at CDA's Research Station in Winnipeg after ten years of breeding. It is an improvement on other commercial varieties in maturity, disease resistance, quality and straw length and will set the quality standard for future Canadian breeding programs.

Originally, the main task of the experimental farms was to determine the potential of the various combinations of soil and climate for producing crops and maintaining livestock, and to develop and test varieties, breeds and management practices suitable for each area. Today's federal research program continues with this early work but is designed to meet the specific needs of domestic and export markets.

Canada's main crop for generations has been wheat, the efficient production of which stems directly from the help the grain growers have received from research. Without the new varieties produced by plant breeding, it would be unprofitable to grow wheat on large areas of the wheat belt. Comparable improvements in oats and barley have enabled the farmer to continue to grow these valuable cereals despite the incidence of pests and diseases, drought and short growing seasons. Research has also augmented livestock returns to farm incomes by developing better grasses and legumes adapted to the various regions of Canada that differ in climatic and soil conditions. Research in other crops, notably oilseed plants and potatoes, has resulted in new varieties with resistance to diseases, with improved quality and suitability for specific processing, and adapted to the different growing areas. More than 80 new varieties of crops have been developed and put into commercial production in the past 10 years. Research into the storage and processing of crops has been accelerated and has led to valuable innovations in the fruit and vegetable industries and in the protection of stored grain.



A mechanical shaker for harvesting fruit developed at the federal Summerland Research Station in British Columbia. Fruit falls into the canopy and is gently lowered into bins.

In livestock, the main lines of progress are through genetics and nutrition and the main subjects are dairy and beef cattle, pigs, poultry and sheep. The advantages of selective breeding have been evidenced through the records of animals tested for many years. The CDA developed a new breed of hog, the Lacombe, which is proving a worthy addition to the old-time breeds. Romnelet, a range-type sheep, was also an outcome of federal breeding programs. Crosses of several meat-type strains of chickens made at federal institutions have led to performance superior to that of pure strains. Extensive

studies on the causes and control of diseases and parasites of livestock, fur bearing animals and wildlife are carried on with the result that epidemic outbreaks rarely occur and when they do are quickly suppressed. Live animals and meats must attain the high standards required in the export trade.

A matter of constant concern is the protection of crops from diseases and pests. Chemicals have proved to be potent weapons but there is also a continuing search for other control methods. Many weeds can be eradicated by proper tillage and cropping methods and a few have been controlled by insects that feed on them exclusively and destroy them. Fungus diseases may be checked by developing resistant varieties of crops. In biological control, parasites or predators are produced and released to prey on certain insects and eliminate them. Sterilization of male insects by radiation or chemical means is another method used to reduce insects of various kinds.

An area of special interest is that of farm mechanization in which there has been tremendous development in the past 60 years. The Research Branch is expanding its studies in this field at the Engineering Research Service in Ottawa and in the Maritime Provinces, and universities are being encouraged to study the subject more intensively.

Soil surveys are conducted in all provinces in co-operation with provincial departments of agriculture and the universities. Soils are examined and classified as to their chemical and physical characteristics and potential productivity. Soil fertility is under study at many experimental farms and at research stations and is undertaken in close co-operation with the universities. Agrometeorology, a relatively new science, is opening new opportunities to growers to make the best use of the heat, light and moisture available in each farm area.

Although most agricultural research is carried out by the CDA, important programs are also undertaken by the provincial governments and agricultural colleges. Close liaison exists between these different agencies to avoid duplication and to ensure that the services offered by the Federal Government through provincial extension officers are of the kind needed by farmers. Federal research establishments across the country are represented on provincial committees concerned with field crop varieties, fertilizer practices, soil fertility, spray programs, field crop and animal management, and horticulture. Such collaboration ensures that new practices discovered by research are brought quickly to the attention of extension groups to be recommended for local use.

The Grain Research Laboratory.—This Laboratory provides scientific services required in the administration of the Canada Grain Act. It carries out annual studies of the quality of the new crop cereals, maintains a continuous check of the quality of cereal grains as they move forward from the farm to marketing positions and plays a major role in testing (prior to licensing) the quality of plant breeders' varieties of various cereals. A comprehensive program of basic and applied research relating to the quality of Canadian cereal grains is an important task of the Laboratory.

Health of Animals Branch.—This Branch administers the Animal Contagious Diseases Act, the Meat Inspection Act and the Humane Slaughter of Food Animals Act, and operates laboratories for the study of animal diseases. Contagious diseases of animals are controlled through preventive measures of inspection and quarantine of imported livestock and restricted commodities such as meat, farm products and other possible sources of infection; through conducting disease eradication programs, notably of bovine tuberculosis, brucellosis and Johne's disease; through the control and eradication of serious animal diseases when outbreaks occur; and through inspection and certification as to health of livestock for export. The Animal Pathology Division consists of the Animal Diseases Research Institute at Hull, Que., the Animal Diseases Research Institute (Western) at Lethbridge, Alta., and seven branch laboratories; these establishments conduct research and investigations on infectious diseases of animals and produce the biological products required in their control. The Division also provides diagnostic services for

diseases of domestic and wild animals and conducts a training program for departmental officers and veterinarians from other lands. The Meat Inspection Division conducts ante-mortem and continuous post-mortem examination of animals slaughtered at packing plants that market their meat products outside the province in which they operate, ensures maintenance of sanitary standards during processing of the products, accurate labelling and proper kind and use of ingredients and preservatives; it ensures also that, in these plants, the animals are slaughtered in a humane manner.

Economics Branch.—This Branch collects, analyses and interprets economic information needed to formulate and administer departmental programs and policies and does intelligence and research work designed to increase efficiency in agricultural production and marketing and to guide farmers in making needed adjustments in farm organization and operation. It acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, and assists in any economic undertakings with which the Department is concerned. The Branch is also closely associated with the work of the Food and Agriculture Organization of the United Nations, the UN/FAO World Food Programme, the General Agreement on Tariffs and Trade, and the Directorate of Agriculture of the Organization for Economic Co-operation and Development.

Production and Marketing Branch.—The Production and Marketing Branch conducts many of the promotional and regulatory functions of the Department. Six specialized divisions administer legislation and policies in the production and marketing of livestock, poultry, fruits and vegetables, dairy products and plant products, and policies in connection with the control of disease in plants.

The *Livestock Division* administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The *Poultry Division* carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products. The *Fruit and Vegetable Division* administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of inter-provincial and international dealers and brokers who deal in fresh fruits and vegetables. The *Dairy Products Division* administers the Cheese Factory Improvement Act and legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream. The *Plant Products Division* administers Acts and regulations respecting seeds, feedstuffs, fertilizers and pest-control products, conducts field inspections and maintains regional testing laboratories. The *Plant Protection Division* is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

Administration Branch and Information Division.—The general business management of the Department is undertaken by the Administration Branch, the duties of which also embrace emergency measures planning and the Departmental Library; the main emphasis of the Library's collection is, of course, on agriculture but extends also to the life sciences.

The Information Division gathers and publishes information arising from research work and the development of regulatory programs of the Department. Publication is through the printed word, press and radio releases, motion pictures, television and exhibits.

Subsection 2.—Farm Assistance Programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income. In pursuit of these objectives, the Department of Agriculture has carried on, over a long period, a program designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations such as the Prairie Farm Rehabilitation Act (see p. 456) to deal with the results of the drought in the 1930s; the Prairie Farm Assistance Act (p. 474) to mitigate the effects of crop failure; Feed Grain Assistance Regulations (p. 475) to assist in the movement of western feed grains to Eastern Canada and British Columbia; and the Maritime Marshland Rehabilitation Act (p. 452) to save valuable soil in the Maritime Provinces.

Although much has been accomplished and is still being accomplished by these measures, changes in the past two decades have dictated a different approach to some problems. Large-scale mechanization was the sequel to the reduction of manpower available to farmers; the number of farms declined but the size of farms increased; marketing and income problems took different forms. Legislation enacted to meet these situations include price support (Agricultural Stabilization Act), production and markets stabilization (Canadian Dairy Commission Act), crop insurance (Crop Insurance Act), resource development (Agricultural and Rural Development Act and Fund for Rural Development Act), feed grain assistance (Livestock Feed Assistance Act) and credit facilities (Farm Improvement Loans Act, Prairie Grain Advance Payments Act, Farm Credit Act and Farm Machinery Syndicates Credit Act). These measures, with the exception of the Agricultural and Rural Development Act and the Fund for Rural Development Act (see pp. 459-460), are described individually below.

Agricultural Stabilization Act.—The Agricultural Stabilization Act (SC 1958, c. 22, proclaimed Mar. 3, 1958) established the Agricultural Stabilization Board and repealed the Agricultural Prices Support Act, 1944. The Board is empowered to stabilize the prices of agricultural products in order to assist the agricultural industry in realizing fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less than 80 p.c. of the previous ten-year average market or base price, the prices of nine commodities (cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley produced outside the prairie areas as defined in the Canadian Wheat Board Act). Other commodities may be supported at such percentage of the base price as may be approved by the Governor in Council. Since the Act came into force, the following farm products, other than the nine named commodities, have been supported at one time or another: honey, potatoes, soybeans, sunflower seeds, sugar beets, tobacco, turkeys, apples, peaches, sour cherries, apricots, raspberries, asparagus, tomatoes, milk for manufacturing and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment, or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of deficiency payments, the price stabilization program has been assisting the agricultural industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. The institution of limited deficiency payments by the Board assists

in the adjustment of production in a relatively short time. During the period of adjustment, the Board guarantees a minimum average return to producers for a limited quantity of product.

The cost of stabilization programs under the Act averages \$58,500,000 a year. The Board has available a revolving fund of \$250,000,000. Losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

Canadian Dairy Commission Act.—The Canadian Dairy Commission was established by the Canadian Dairy Commission Act, 1966, and became operative on Apr. 1, 1967. The affairs of the Commission are directed by three Commissioners, and its objects are "to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality".

To perform its functions, the Commission is authorized to stabilize prices of major dairy products through offers to purchase at fixed prices, thus establishing stable prices in the interests of both producers and consumers. The Commission may borrow from the Minister of Finance the funds required for such purchases to a maximum of \$100,000,000, which must be repaid.

The Commission administers the payment of funds provided to it by the Government for subsidies to producers of milk and cream used in the production of dairy products. These payments supplement returns to producers from the market and permit market prices to be kept at reasonable levels. The total quantity of milk and cream on which subsidy is paid is restricted to the volume required to serve the Canadian domestic market. Each producer is given a quota for the amount for which he is eligible for subsidy. The Commission, indirectly, pools returns to producers from products sold on the domestic and export markets through an export equalization fund. Money for this is deducted from the subsidy and payments are made to equalize export prices with domestic prices for any surplus products that must be exported.

The Commission also has authority, under regulation by the Governor in Council, to exercise control of the interprovincial and export movement of dairy products, and to perform other functions related to its responsibilities.

Crop Insurance Act.—To assist in making the benefits of insurance protection on crops available in all provinces, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative for establishing schemes to meet their own regional requirements rests with the provinces. Schemes may be organized on the basis of specific crops or areas within the provinces and agreements between the provinces and the Federal Government set out the terms of insurance coverage.

Under the Act and amendments of 1964 and 1966, the Federal Government will pay 50 p.c. of the administrative costs incurred by a province and 25 p.c. of the amount of premiums required to make the scheme actuarially sound. In addition, the Federal Government may make loans to any province equal to 75 p.c. of the amount by which indemnities required to be paid under policies of insurance exceed the aggregate of the premium receipts for that year, the reserve for the payment of indemnities, and \$200,000. As an alternative to such loans, the Federal Government may re-insure a major portion of the provincial risk in a program operated under the Crop Insurance Act. Farmers

insured under the Act are not eligible for payments under the Prairie Farm Assistance Act, nor are they required to pay the 1-p.c. levy on grain sales as provided for under that Act.

In 1968, 64,860 farmers purchased \$188,167,000 worth of insurance coverage for their crops, compared with 33,411 farmers and \$91,297,677 worth of coverage in 1967. Premiums collected totalled \$12,600,000 (including the federal share) and indemnities paid out approached \$15,000,000. Several factors contributed to the substantial increase in 1968: (a) coverage was available to farmers in Quebec for the first time and other provinces extended their coverage to new areas; (b) insurance was available on more crops; (c) more farmers are purchasing insurance and many farmers are purchasing higher coverage as the scheme becomes better known and the benefits from crop insurance become more apparent. Insurance coverage will be available in all provinces except Newfoundland and New Brunswick in 1969.

Farm Improvement Loans Act.—The Farm Improvement Loans Act (RSC 1952, c. 110), administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electrical system, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling and to purchase additional land for the purpose of farming. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. The latest extension was for the period July 1, 1968 to June 30, 1971. The maximum repayment period for land purchase is 15 years and for all other purposes 10 years. The interest rate is prescribed in the regulations and is adjustable semi-annually on Apr. 1 and Oct. 1 of each year to reflect changes in the levels of interest rates generally. The borrower is required to provide from 10 p.c. to 33½ p.c. of the cost of his purchase or project, depending on the loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$900,000,000 which may be lent by the chartered banks and a limit of \$300,000,000 which may be lent by other designated lenders. By Dec. 31, 1967, 3,432 claims amounting to \$2,682,007 had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one tenth of 1 p.c. after recoveries have been taken into account. The maximum loan or amount that may be outstanding to a borrower at any one time stands at \$25,000.

1.—Loans Made and Repayments under the Farm Improvement Loans Act, 1945-67

Period	Loans Made	Repayments ¹	Balance Outstanding
	\$	\$	\$
Mar. 1, 1945 to Feb. 28, 1948.....	33,605,576	33,605,576	—
Mar. 1, 1948 to Feb. 28, 1951.....	142,372,774	142,371,676	1,698
Mar. 1, 1951 to Mar. 31, 1953.....	199,449,006	190,440,609	8,397
Apr. 1, 1953 to Mar. 31, 1955.....	222,723,494	222,696,686	26,808
Apr. 1, 1955 to Mar. 31, 1956.....	239,064,072	238,875,039	189,033
Apr. 1, 1956 to Mar. 31, 1959.....	346,906,122	344,201,512	2,704,610
Apr. 1, 1959 to June 30, 1962.....	447,765,708	390,630,567	57,135,141
July 1, 1962 to June 30, 1965.....	523,091,109	154,657,930	368,433,179
July 1, 1965 to Dec. 31, 1967.....			
Totals	2,145,977,861	1,717,478,995	428,498,866

¹ Includes principal amount of claims paid under government guarantee.

2.—Loans Made under the Farm Improvement Loans Act, by Purpose and Province, 1966 and 1967, with Cumulative Totals from 1945

Purpose and Province	1966		1967		Cumulative Totals 1945-67	
	Loans	Amount*	Loans	Amount	Loans	Amount
	No.	\$	No.	\$	No.	\$
Purpose						
Purchase of agricultural implements	65,580	162,058,466	57,801	148,823,936	1,140,488	1,703,138,797
Construction, repair or alterations of, or making additions to any building or structure on a farm..	8,541	29,178,411	8,296	30,337,203	109,006	235,096,363
Purchase of livestock.....	6,972	14,352,909	6,528	14,577,840	110,093	146,258,993
Other improvements.....	4,460	7,206,678	5,624	9,925,877	59,506	61,483,708
Totals.....	85,553	212,796,464	78,249	203,664,856	1,419,093	2,145,977,861
Province						
Newfoundland.....	17	45,708	8	35,050	631	996,516
Prince Edward Island.....	1,206	2,532,369	1,009	2,242,349	20,544	25,348,204
Nova Scotia.....	492	982,454	499	1,146,897	13,863	16,719,454
New Brunswick.....	532	1,303,644	415	980,431	11,893	16,814,076
Quebec.....	466	1,173,774	340	1,079,206	113,348	154,748,970
Ontario.....	16,289	41,348,340	15,457	42,915,898	239,296	387,534,068
Manitoba.....	10,794	26,623,199	9,212	23,634,320	172,424	253,360,300
Saskatchewan.....	27,116	68,084,097	23,115	58,802,327	410,023	624,906,021
Alberta.....	26,029	63,160,132	25,692	65,256,556	395,845	597,060,485
British Columbia.....	2,612	7,542,747	2,502	7,571,822	41,226	68,489,767

Prairie Grain Advance Payments Act.—This Act, which came into force on Nov. 25, 1957, and was subsequently amended in August 1958 and November 1968, provides for interest-free advance payments to producers in Western Canada for farm-stored threshed grain (wheat, oats and barley). Advance payments of \$1 per bushel of wheat, 40 cents per bushel of oats and 70 cents per bushel of barley are made subject to certain restrictions as to quota and acreage. The total of advances obtained in any crop year may not exceed \$6,000. Repayment is effected by deducting 50 p.c. of the initial payment for all grain delivered subsequent to the loan until the producer has discharged his advance.

3.—Applications, Advances and Refunds under the Prairie Grain Advance Payments Act, Years Ended July 31, 1959-68

Year Ended July 31—	Applica- tions	Total Advance	Average Advance	Total Refunded	Percentage Refunded
	No.	\$	\$	\$	
1959.....	45,341	34,269,653	758	34,364,987	99.9
1960.....	50,047	38,492,505	769	38,487,024	99.9
1961.....	76,089	63,912,550	840	63,900,682	99.9
1962.....	22,342	16,656,713	746	16,644,365	99.9
1963.....	39,683	29,251,626	737	29,236,449	99.9
1964.....	63,427	62,136,418	980	62,100,703	99.9
1965.....	38,375	32,961,844	859	32,913,014	99.9
1966.....	43,509	40,600,386	933	40,470,289	99.7
1967.....	36,953	36,668,270	992	35,242,003	96.1
1968.....	45,811	47,280,738	1,032	45,457,285	96.1

Farm Credit Act.—The Farm Credit Act (SC 1959, c. 43, proclaimed on Oct. 5, 1959) established the Farm Credit Corporation as successor to the Canadian Farm Loan Board established in 1929. The Corporation, which is a Crown agency, reports to Parliament through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans for farmers. Under Part II the Corporation may lend up to 75 p.c. of the appraised value of the farm land and buildings taken as security, not exceeding \$40,000 for one, \$80,000 for two or \$100,000 for three or more owner-operators principally occupied in a single farming business. Under Part III loans may be made up to 75 p.c. of the appraised value of the land and chattels, not exceeding \$55,000 for one or \$100,000 for two or more qualified owner-operators in a single farm business. Special provision is made under this Part for loans up to 90 p.c. of farm assets where the owner-operator is under 35 and the management of the farm will be considerably above average. Part III loans are further secured by insurance on the life of the borrower, and his farming operations are subject to supervision by the Corporation. Similar life insurance and supervision are available to Part II borrowers on an optional basis.

Under both Parts, applicants must be at least 21 years of age and principally occupied in farming. Individual borrowers under Part III must be between 21 and 45. To qualify for more than \$55,000 under Part III, there must be at least two owner-operators under 45, or one under 35. All loans are repayable on an amortized basis within a period not exceeding 30 years. The interest rate is set by Order in Council and varies with the cost of money to the Corporation.

The Corporation has 127 field offices administered by 234 credit advisers who are responsible for informing local farmers about the services available, for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be borrowed by the Corporation from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation. This capital was raised by amendment to the Act in 1968 from \$40,000,000 to \$56,000,000. There were 63,482 loans to the amount of \$944,418,009 outstanding as of Mar. 31, 1968.

4.—Loans Approved and Disbursed under the Farm Credit Act,¹ Years Ended Mar. 31, 1959-68

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year Ended Mar. 31—	Loans Approved		Loans Paid Out	Year Ended Mar. 31—	Loans Approved		Loans Paid Out
	No.	\$	\$		No.	\$	\$
1959.....	4,805	30,144,950	28,368,265	1964.....	8,689	108,009,100	96,315,635
1960.....	5,339	40,031,250	35,840,882	1965.....	10,142	154,813,900	139,750,639
1961.....	5,597	60,704,050	52,305,265	1966.....	11,238	208,984,900	201,687,642
1962.....	5,885	68,574,850	68,886,875	1967.....	12,167	247,947,500	234,447,269
1963.....	7,438	90,924,300	78,428,094	1968.....	11,954	263,236,500	251,228,049

¹ The Farm Credit Act replaced the Canadian Farm Loan Act on Oct. 5, 1959.

5.—Loans Approved under the Farm Credit Act, by Province, Years Ended Mar. 31, 1966-68

NOTE.—Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Province	1966		1967		1968	
	No.	\$	No.	\$	No.	\$
Newfoundland.....	2	45,700	14	363,100	9	167,900
Prince Edward Island.....	100	1,134,900	141	2,242,700	120	2,287,100
Nova Scotia.....	58	1,006,800	49	842,200	39	770,100
New Brunswick.....	81	1,304,400	195	3,592,200	144	2,660,500
Quebec.....	1,140	18,987,200	1,522	25,941,200	1,406	25,668,800
Ontario.....	2,210	42,695,300	2,042	43,332,600	2,012	43,956,600
Manitoba.....	899	14,879,500	1,122	22,160,200	1,211	27,933,300
Saskatchewan.....	3,197	56,570,200	3,656	72,040,700	3,665	80,618,600
Alberta.....	2,940	58,346,300	2,844	62,408,800	2,829	65,556,200
British Columbia.....	611	14,014,600	582	15,017,800	519	13,617,400
Totals.....	11,238	208,984,900	12,167	247,947,500	11,954	263,236,500

Farm Syndicates Credit Act.—The Farm Syndicates Credit Act (SC 1964, c.29, as amended by SC 1968-69, c.32) authorizes the Farm Credit Corporation to lend to qualified groups of farmers (referred to as syndicates). A syndicate is a group of three or more farmers, the majority of whom have farming as their principal occupation, who have signed an agreement acceptable to the Corporation with respect to the joint purchase and use of machinery, equipment or buildings which can be used profitably by them in their farming operations. Co-operative farm associations and certain farming corporations may qualify as syndicates for loans without the members entering into a formal agreement.

A syndicate may borrow up to 80 p.c. of the cost of machinery, buildings (including site and other improvements) and installed equipment suitable for joint use, to a maximum of \$15,000 per member or \$100,000, whichever is the lesser. Loans are repayable over a period not exceeding 15 years for buildings and installed equipment, and seven years for mobile machinery. The interest rate is based on the cost of funds to the Corporation, advanced by the Minister of Finance, and its expenses in servicing loans. There is an initial charge of 1 p.c. on the amount of each loan. Security is provided by a promissory note signed by each syndicate member, and such other security as may be required. Up to Mar. 31, 1969, the Corporation had approved 577 loans totalling \$4,600,000.

Prairie Farm Assistance Act.—The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. Its purpose is to assist in dealing with a relief problem which the provinces and municipalities cannot do alone and to enable the farmers to put in a crop the following year. Payments for the 1967-68 crop year, as at July 31, 1968, totalled \$8,885,965; payments made under the Act since 1939 amounted to \$369,966,665.

Payments are made from the Prairie Farm Emergency Fund to which farmers contribute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. The additional funds required are provided from the federal treasury. The total collected through the 1-p.c. levy in the 1967-68 crop year, as at July 31, 1968, was \$10,106,186; the amount collected since 1939 was \$196,009,171.

Farmers operating land in the spring wheat area, and not covered by a federal-provincial crop insurance scheme, are eligible for awards. Crop failure and natural causes preventing seeding and summerfallowing are taken into account in making awards. These may not exceed \$800 in respect of any one farmer's total cultivated acreage.

Livestock Feed Assistance Act.—The Livestock Feed Assistance Act (SC 1966, c. 52) established the Canadian Livestock Feed Board, which is a Crown agency reporting to Parliament through the Minister of Agriculture. The Board has four main objects which are to ensure: (1) the availability of feed grain to meet the needs of livestock feeders; (2) the availability of adequate storage space in Eastern Canada for feed grain to meet the needs of livestock feeders; (3) reasonable stability in the price of feed grain in Eastern Canada and in British Columbia; and (4) fair equalization of feed grain prices in Eastern Canada and in British Columbia.

In furtherance of these objectives, the Board may make payments related to the cost of feed grain storage and transportation. Feed grain transportation assistance payments have been made since 1941, and since April of 1967 have been made under the authority of the Livestock Feed Assistance Act. Under the Feed Grain Assistance Regulations of the Appropriations Act, the original policy was initiated in October 1941 to provide a market for western feed grains, and to enable livestock feeders in Eastern Canada and British Columbia to obtain supplies of feed grains at a cost that would maintain livestock and poultry production at a high level. This program was modified over the years to encourage better use of transport and storage facilities. The program, which was limited initially to rail and water transport, was extended to highway carriage in 1964 in Eastern Canada.

During the past two years, under the Canadian Livestock Feed Board, the policy has been extended to include payment of transportation assistance on corn grown in Ontario and shipped to the Atlantic Provinces and wheat grown in Ontario and shipped to Quebec and the Atlantic Provinces. Trucks were first authorized to transport feed grains under the policy in British Columbia in July 1968.

During the year ended Mar. 31, 1968, \$21,336,529 was spent on transportation assistance and \$88,909 on storage assistance on feed grains in store in vessels at Eastern Elevators during the winter months. These vessels were approved by the Board as being necessary to supplement storage space at Eastern Terminal Elevators.

6.—Freight-Assisted Shipments of Feed Grains, by Province of Destination, Year Ended Mar. 31, 1968

Province	Western Wheat and Sample Feed Grain	Oats	Barley	Rye	Screen- ings	Mill- feeds	Eastern Corn and Wheat	Total Ship- ments	Expendi- ture
	tons	tons	tons	tons	tons	tons	tons	tons	\$
Nfld.....	6,306	3,086	7,038	560	1,333	5,680	461	24,464	462,169
P.E.I.....	5,414	3,666	17,000	252	1,306	9,184	1,561	38,383	543,756
N.S.....	44,552	22,362	39,874	1,852	7,701	33,280	9,080	158,701	1,839,095
N.B.....	10,430	16,400	22,523	1,219	6,423	28,622	2,959	88,576	1,180,677
Que.....	185,767	339,643	444,841	16,518	27,332	256,755	1,401	1,272,257	9,943,542
Ont.....	77,060	262,133	310,016	11,392	43,845	155,745	—	860,191	4,619,345
B.C.....	73,982	44,511	115,125	1,400	6,296	33,240	1,812	276,366	2,747,945
Totals.....	403,511¹	691,801	956,417	33,193	94,236	522,506	17,274²	2,718,938	21,336,529

¹ Includes 1,289 tons of sample feed grain in British Columbia, origin shipped into British Columbia.

² Includes 1,812 tons of corn of Manitoba

Section 3.—Provincial Governments in Relation to Agriculture

Subsection 1.—Agricultural Services

Newfoundland.—Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines, Agriculture and Resources. The Division consists of a director and a staff of 64 officers. For purposes of administration, the province is divided into nine districts in each of which is located a fieldman with permanent headquarters. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of \$125 an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them.

Every encouragement is given to the production of livestock. Favourable marketing conditions and departmental assistance and loans under the Provincial Farm Development Loan Act have contributed to increased output of poultry products and pork. The Provincial Veterinarian and his staff supervise the health of animals program and the federal-provincial project for the eradication of bovine tuberculosis.

Prince Edward Island.—The activities of the provincial Department of Agriculture are indicated by its staff establishment which includes, in addition to the Minister and Deputy Minister, a dairy superintendent, three check testers, three dairy herd improvement promoters, a director of veterinary services and 10 subsidized practising veterinarians, a livestock director, a director of marketing and research and two research fieldmen, a director of extension, a horticulturist, a soil analysis assistant, a poultry fieldman, an economist, an agronomist, a director of 4-H Clubs and an assistant, three agricultural representatives, a nursery supervisor, a forester and an assistant forester, a farm improvement supervisor and a director of Women's Institutes.

Nova Scotia.—The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association, various agricultural co-operative organizations, credit unions and producer and marketing organizations.

New Brunswick.—Provincial government agricultural policy and programs in New Brunswick are administered and directed by the Department of Agriculture and Rural Development. Under the Minister of Agriculture and Rural Development, the Department is administered by a deputy minister, an assistant deputy minister and the directors of Branches concerned with: extension, livestock and dairying, veterinary services, poultry, plant industry, agricultural engineering, home economics, credit unions and co-operatives, agricultural education and rural development.

Quebec.—Quebec agricultural policy is based on the principle that the commercial family farm is the ideal foundation for the rural social structure. It is therefore aimed at organized modernization of this type of operation. The provincial government, in conjunction with agricultural, co-operative and professional associations, seeks to increase agricultural productivity in the province by promoting the professionalization of farming, by updating production methods, by developing marketing procedures for farm products, and through rural development. Responsibility therefore is vested in the Department of Agriculture and Colonization operating under the authority of a minister and three deputy ministers.

The Production and Development Branch, under an assistant deputy minister, operates at the management level. Its activities are focused mainly on research, technical education, popularization of knowledge, land development, and animal and plant improvement and receive support from the Farm Credit Bureau which provides land and farm improvement loans. As a result of large-scale decentralization of provincial administration to 12 agricultural areas, farmers are receiving fast and diversified service.

Government, recognizing the importance of farm product marketing, has set up a Marketing Branch headed by a director general. This Branch is responsible for establishing quality standards for farm products and their control, wholesomeness of foodstuffs,

farm product classification, fair sales practices, and for the promotion of modern processing and marketing techniques. In this field, the Department is assisted by the Agricultural Marketing Board.

These two Branches, whose function is to serve farm operators, receive guidance and support from a number of scientific and administrative services including an economics and planning service, a veterinary training service, a scientific information and publicity service, and a farm hydraulics service. Additional to this group of professional bodies is an integrated administrative service in charge of personnel, accounting, the payment of grants, property management, etc.

ARDA Quebec, which operates in a number of departments, is administered by an assistant deputy minister of the Department of Agriculture and Colonization. The government has enacted crop insurance legislation, administered by an *ad hoc* agency, to protect farmers against weather hazards. In addition, a sugar refinery and a blueberry freezing plant are operated under departmental management.

Ontario.—The Ontario Department of Agriculture and Food conducts a wide variety of programs to develop a sound agricultural industry and to help farmers. Most assistance is through self-help programs which benefit the individual farmer directly. The Department administers 44 separate Acts of the Legislature, some of which are regulatory on an industry-wide basis.

Through the Agricultural Rehabilitation and Development Branch (ARDA) the province shares equally with the Federal Government the cost of rural development. In Ontario ARDA is heavily committed to farm enlargement and consolidation, accompanied by retraining programs, and research. Other ARDA projects in Ontario include community pastures where farmers rent pasture at cost, and soil, water and wildlife conservation projects.

Research and education are administered by the Education and Research Division of the Department. Under the Division, the Agricultural Research Institute of Ontario recommends and co-ordinates research for the betterment of agriculture, veterinary medicine and household science, undertakes continuous research on crops, livestock and farming practices, and administers a number of services. Horticultural research is co-ordinated by the Horticultural Research Institute of Ontario, which also operates under the Education and Research Division. Fruit and vegetable product development research, and fruit and vegetable variety research are the chief functions of the Institute.

The Crop Insurance Commission of Ontario, a Branch of the Department, provides insurance against weather, insect and disease perils on winter wheat, spring grain (oats, barley and mixed grain under combined coverage), forage crops (hay, corn silage and, indirectly, improved pasture), grain corn, soybeans and white beans, and the program continues to expand into other areas of production. Premium rates are subsidized 25 p.c. by the Federal Government and 5 p.c. by the Ontario Government.

The Ontario Food Council Branch of the Department has the broad responsibility of finding methods to better co-ordinate marketing of Ontario farm products. The Council includes representatives of producers, processors, wholesalers, distributors and consumers. Market development, import replacement and expanding food information services are major areas of the Council's work.

The programs of the Veterinary Services Branch fall into the categories of service and regulation. Services include administration of a mastitis control program, a certified herd policy for swine and veterinary assistance for designated areas (mostly in the northern districts); the Regulatory Division administers the Meat Inspection Act, the Brucellosis Act 1965, the Animal Contagious Diseases Act, the Livestock Community Sales Act, the Dead Animal Disposal Act and the Rabies Indemnification program. The Branch provides diagnostic services for livestock and poultry producers at five regional laboratories.

The Milk Commission of Ontario and the Dairy Branch are responsible for dairy programs. Under the Milk Act, 1965 and through the Ontario Milk Marketing Board and the Ontario Cream Producers' Marketing Board, the Commission is responsible for all producer marketing of milk and cream in the province. The Ontario Milk Marketing Board directs milk from farm to plant and establishes prices. The Branch administers the Farm Products Payments Act, 1967, the Oleomargarine Act, and the Edible Oil Products Act. The Branch licenses processors and distributors, carries on extension work with producers, operates milk-testing laboratories for the purpose of calculating producer returns, certifies butter and cheese makers, graders and testers, and does inspection work on farm and in plant.

Under the Farm Products Marketing Board, a Branch of the Department of Agriculture and Food, 22 producer boards market 40 commodities with a total market value of between \$450,000,000 and \$500,000,000 annually.

The Ontario Junior Farmer Establishment Loan Corporation makes first-mortgage loans to junior farmers between 21 and 35 years of age. A junior farmer may apply for a loan of up to 80 p.c. of the appraised value of the farm and buildings, to a total of \$40,000. In addition, guaranteed loans to junior farmers from chartered banks of up to \$10,000 for operating capital are available. Life insurance and farm management programs are available to all borrowers but are mandatory for those borrowing over \$20,000.

The Co-operative Loans Board makes loans to co-operatives for the construction of cold storages, feed mills, processing plants, grain elevators, potato storages, dairies, creameries and cheese factories.

There are 54 county and district Extension Branch offices to serve Ontario farmers. The agricultural representative carries the findings of all research organizations directly to farmers; all representatives have had training in farm management principles. In addition, specialists on farm management and engineering are located strategically throughout the province. The Branch endorses and assists the 4-H Clubs and the Junior Farmers' Association of Ontario and also administers the northern Ontario assistance policies which vary from district to district and from year to year.

The Home Economics Branch conducts an extension program for rural women's groups and for girls' 4-H homemaking clubs. The senior program deals with the study of foods, nutrition, clothing, textiles, home furnishings, home crafts and home management.

The Soils and Crops Branch conducts programs of applied research to provide farmers with specific recommendations for their areas. Much of the work of the soils and crops specialists is carried on through demonstrations and at meetings of local branches of the Ontario Soil and Crop Improvement Association. The specialists supervise county weed inspectors.

The Live Stock Branch supervises numerous livestock improvement programs and administers the Warble Fly Control Act, the Artificial Insemination Act, the Dog Tax and Live Stock and Poultry Protection Act, and the Hunter Damage Compensation Act. Livestock improvement programs include dairy herd improvement; beef cattle performance testing; quality meat sire policy; bull, boar and ram premium policies; production testing in sheep and the federal-provincial sheep transportation assistance policy, and northern Ontario live stock assistance. The Branch sponsors and endorses the Ontario Beef Cattle Improvement Association and the county and district associations, makes grants available to regional livestock clubs that hold sales of good quality breeding stock, and sponsors exhibits of livestock outside the province.

The Information Branch publishes and distributes several hundred publications covering most areas of agriculture in Ontario, as well as home gardening and homemaking. News releases, radio tapes and television are used to convey information on important changes in agriculture to farmers. Its film library distributes more than 2,000 films annually to the public.

The Agricultural and Horticultural Societies Branch advises and offers financial assistance to agricultural and horticultural societies and ploughmen's associations throughout the province and administers the Community Centres Act which authorizes grants to municipalities for capital investments in community centres and recreational facilities.

Manitoba.—The Department of Agriculture serves Manitoba through the following branches.

The Extension Service Branch deals with rural extension education generally and has specialists devoting attention particularly to agricultural engineering, entomology and beekeeping, radio, TV and information, 4-H Clubs and women's work, manpower and rural development. Meetings, field days, and short courses are held; 37 agricultural representatives and six assistants are located in 35 offices in the province, each serving from one to five municipalities, four manpower extension agents serve the Interlake region, and 14 home economists serve designated areas.

The Animal Industry Branch develops and administers policies that encourage the improvement and efficient production of different classes of livestock, including poultry, supervises the grading of cream and inspects dairy manufacturing plants. Several Acts to promote high quality products for consumer protection are administered in co-operation with federal departments.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage and special crops and horticulture and promotes proper land use through soil conservation programs. The Branch develops and administers policies that encourage good field crop husbandry, soil conservation land development and weed control.

The Economics and Publications Branch deals with agricultural economics, supervises the farm business clubs and publishes and distributes annually approximately 250,000 bulletins, circulars, posters, leaflets, etc. The Branch is responsible for publishing provincial agricultural statistics and maintains an agriculture reference library.

The Co-operative Services Branch registers and supervises co-operatives and credit unions and administers the Acts governing them. It also collects and compiles statistics on co-operative activity throughout the province. Producer marketing boards and Marketing Commissions under the Natural Products Marketing Act are also served and administered through this Branch.

The Veterinary Services Branch provides a diagnostic laboratory for animal diseases; administers the brucellosis control program, the Veterinary Services District Act and the Veterinary Science Scholarship Fund Act; and works in close co-operation with practising veterinarians and the federal Health of Animals Branch in the control of livestock and poultry diseases.

Saskatchewan.—The Saskatchewan Department of Agriculture is composed of the following branches and services.

The Agricultural Representative Branch staff serves all branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services; they work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information and to develop district improvement programs. The Department pays half of the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Departments of Manpower and Immigration and of Labour. Farm information is dispensed over private radio stations, over TV stations and to the press by the Information Division and by the agricultural representatives.

The Production and Marketing Branch is comprised of three major divisions—Animal Industry, Plant Industry and Veterinary. The first two divisions provide

specialist services to agriculture and agricultural representatives in field crops, weed and insect control, soil conservation, horticulture, agriculture, livestock and poultry, and administer related Acts and programs. The Veterinary Division administers the Veterinary Service District Act and Calfhood Vaccination Program, provides laboratory services and co-operates with the Federal Government and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and water utilization and control projects. Land reclamation and development and the construction of provincial community pastures also come within its jurisdiction.

The Lands Branch administers Crown land, except forest reserves and parks in settled areas, classifies it according to the use for which it is best suited and disposes of it under lease or sale. The Branch also secures land control for land utilization projects, supervises new settlement projects, pays for clearing and breaking by farmers on provincial leases, and operates provincial community pastures.

Farmers are assisted by the Family Farm Improvement Branch which gives technical advice at the farm on the construction of farm buildings, and on farmstead planning mechanization and materials handling. The Branch conducts research for farm water and sewage works and provides technical and financial assistance for their installation.

The Economics and Statistics Branch undertakes research and investigations required to formulate and evaluate policies and programs that will ensure a high level of growth and efficiency in Saskatchewan's agriculture; it collects, analyses and distributes economic information and principles to assist people interested in or engaged in agricultural pursuits. Data on crop conditions, production, marketings and income are available from the Statistics Division.

Alberta.—The Alberta Department of Agriculture has seven Divisions. The Plant Industry Division administers programs and policies relating to crop improvement; crop protection and pest control; soils and soil conservation; weed control; horticulture; apiculture and special projects. A crop diagnostic service is offered through a Crop Clinic at Edmonton and horticultural services at a horticultural station at Brooks; a tree nursery at Oliver provides trees for farm planting.

The Animal Industry Division administers legislation, policies and programs in the broad area of livestock, dairy and poultry production and in processing and marketing, including: setting standards for and approving public sales of sires; sire purchase assistance; ROP programs for beef cattle, swine and sheep; extension programs for all classes of stock; administering standards and qualifications for the artificial insemination (AI) industry; supervising feeder associations; brand registration and inspection; licensing of butchers, livestock dealers, stockyards and AI technicians; pound districts and sale of horned cattle. The testing, grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation and temperature control for dairy and frozen-food plants. A regular cow-testing service to provide the basis for breeding, feeding and culling dairy cattle is available to dairy producers, and chemical and bacteriological analyses are conducted for industrial directives. Licences are issued to poultry hatcheries, wholesalers, first receivers and truckers and programs are conducted for control of pullorum-typhoid diseases of chicken- and turkey-hatching egg supply flocks; extension programs, cost studies, disease tests and surveys, and research projects with respect to poultry are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases and conducts investigations of disease conditions; provides lecture services for the University of Alberta and for other groups; promotes such policies aimed at reducing losses in brucellosis control, stockyard inspection, swine health programs, mastitis, etc.; and administers the licensing and exporting of live fur bearing animals and pelts and assists fur farmers in care, management and stock improvement.

The Extension Branches of the Agricultural Extension and Colleges Division operate 53 offices and employ 72 district agriculturists and 28 district home economists who supply information and guidance to farm families and promote progressive agricultural and home-making policies and programs. Their work is co-ordinated by seven regional agriculturists and is complemented by an expanding staff of regional specialists in livestock, plant industry, economics, engineering, and home economics. Five broadcasts are conducted each week over ten radio stations and weekly and daily press material is issued to radio, TV and the press; publications are supplied to the rural public and visual aids are provided for department staff members. Agricultural and vocational colleges are operated at Olds, Vermilion and Fairview, all three offering five courses in agriculture—a general course, or majors in plant science, animal science, agricultural mechanics and farm management. They also offer a complete business course and a short course in land appraisal and assessment. Special courses include horticulture, fashion and design, and irrigation technology at Olds; home economics and AI technician training at Vermilion; and motor mechanics and welding at Fairview.

The Agricultural Economics Division provides extension information on farm management, credit and marketing to aid farmers in instituting good business practices on the farm; collects, analyses and disseminates agricultural statistics in collaboration with the Dominion Bureau of Statistics; conducts studies on farm production costs and returns, marketing, and resource and rural development; and provides advisory assistance on economic matters to government departments, the agricultural industry and farm groups. Credit is made available to farmers for the purchase of land under the Farm Purchase Credit Act and for home improvements under the Farm Home Improvement Act.

The Water Resources Division administers legislative control over the province's water resources and all functions connected with the allocation, apportionment, and distribution of surface and ground water. Its basic responsibility is to foster an orderly development of available water supplies to meet all the foreseeable needs of the province. Thus, the Division is responsible for Alberta's large-scale water conservation and development program known as "The Prairie Rivers Improvement and Management Evaluation" (PRIME), embodying major water diversion and storage areas for the transfer of water from areas of surplus to areas of deficiency. Divisional programs include: (1) design and construction activities on water control projects in the various categories of irrigation, drainage, flood control, river and erosion control, water development and conservation when it is in the public interest to do so; (2) inventory, distribution and magnitude of surface and ground-water; (3) land development planning for irrigation purposes and the management and use of water as it relates to agricultural production; and (4) activities related to seepage and salted land reclamation, to promote, develop and improve irrigation practices, and the determination of the physical characteristics of soils relevant to the soil water phenomena.

The Program Development Division administers the ARDA and related rural development programs, including the former provincial ARDA program; the Conservation and Utilization Branch, including the land assembly program, the farm adjustment and consolidation program, the land improvement and conservation program, the renewable resources research program, the Utilization of Lands and Forests Act and the Canada Land Inventory. Other Branches of the Division include the Agricultural Products Marketing Council, which establishes and regulates marketing boards and commissions to assist in the marketing of agricultural products; the Municipal Agricultural Programs Branch, which assists in programs carried out by local authorities, administers the federal-provincial manpower agreements, and assists in the administration and achievement of objectives of agricultural societies; and the Irrigation Secretariat, which administers, for the Irrigation Council, the Alberta Irrigation Act in the areas of administration, operation, maintenance, and reconstruction of irrigation projects and districts in the province.

British Columbia.—The Department of Agriculture comprises three Divisions—General Administration, General Services, and Production and Special Services. General

Administration is responsible for the direction of policies affecting farmers' institutes, institutional farms, personnel and publications. The General Services Division includes the Agricultural Rehabilitation and Development Act (ARDA), Crop Insurance, Farm Economics, and Markets and Statistics Branches. The Production and Special Services Division includes all other Branches—Agricultural Development and Extension, Apiary, Dairy, Entomology and Pest Control, Field Crops and Soil Testing, Horticulture, Plant Pathology, Poultry, Soil Survey, and Veterinary and Livestock.

The Agricultural Development and Extension Branch offers general information services to farmers through 17 offices located in all major farming districts. In addition, the Branch provides agricultural engineering service and supervision of the 4-H Clubs and government land-clearing programs. The Horticulture Branch serves the fruit, vegetable and allied industries through nine branch offices. The Veterinary and Livestock Branch administers regulations pertinent to livestock production and marketing and provides veterinary services, brands inspection and associated dairy herd improvement services at 10 locations throughout the province.

Subsection 2.—Agricultural Schools, Colleges and Universities

All of the provinces of Central and Western Canada have agricultural colleges in association with universities that give courses leading to degrees in agricultural science and home economics and also provide postgraduate courses; the University of British Columbia has a faculty of Agricultural Sciences; Ontario, Quebec and Saskatchewan have veterinary colleges. In addition, all of these provinces have schools of agriculture or diploma courses that provide basic training for young people intending to return to farms or interested in employment in businesses allied with agriculture.

In the Maritime Provinces, training in scientific agriculture is available at colleges in Prince Edward Island and Nova Scotia where courses leading to third-year admission to degree courses elsewhere are given. Vocational and short courses are available in all three provinces. All colleges of agriculture engage in research and extension activities.

Section 4.—Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information is obtained through the Censuses of Canada, through partial-coverage mailed questionnaire surveys and from the administrative records of government operations.

The Bureau collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the Canada Department of Agriculture and various provincial departments, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, contribute statistical data to the Bureau and aid directly in DBS survey work. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the following Subsections, details are given for 1967 with earlier comparisons; figures for the latest year are subject to revision and it should be noted that many of those given for earlier years have been revised since the publication of the 1968 Year Book.

* Revised in the Agriculture Division, Dominion Bureau of Statistics.

Subsection 1.—Income from Farming Operations

Cash Receipts from Farming Operations.—Estimates of cash receipts from farming operations include data concerning cash receipts from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, net cash advances on farm-stored grains in Western Canada, deficiency payments made by the Agricultural Stabilization Board, and supplementary payments. Farm cash receipts from the sale of farm products include the returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

Total cash receipts in 1967 from farming operations, excluding supplementary payments, were estimated at \$4,379,000,000 for Canada (excluding Newfoundland), the highest ever recorded. They were 3.3 p.c. above the previous record of \$4,238,700,000 established in 1966 and 22.8 p.c. above the average for the five years 1962-66.

The most significant contributions to the gain in farm cash receipts in 1967 were higher Canadian Wheat Board participation payments, increased cash returns from the sale of dairy products, tobacco, barley, cattle and calves, and larger payments under the dairy support program. In contrast, lower cash returns were realized from wheat, oats, rye, flaxseed, potatoes, hogs and poultry products. Increases in total cash receipts, ranging from about 3 p.c. to 6 p.c., were estimated for Quebec, Ontario, Saskatchewan, Alberta and British Columbia. In the remaining provinces, declines ranged from less than 1 p.c. in Manitoba to nearly 10 p.c. in New Brunswick.

7.—Cash Receipts from Farming Operations (excluding Supplementary Payments)¹, by Province, 1964-67

Province	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000
Prince Edward Island.....	31,674	40,514	36,546	33,807
Nova Scotia.....	46,700	51,506	55,842	55,031
New Brunswick.....	47,485	60,393	53,760	48,827
Quebec.....	458,634	507,968	595,387	634,262
Ontario.....	1,019,693	1,101,135	1,230,904	1,279,037
Manitoba.....	297,554	340,958	375,721	374,708
Saskatchewan.....	836,539	881,371	945,697	970,607
Alberta.....	587,823	654,187	756,950	786,940
British Columbia.....	153,629	164,200	187,881	195,819
Totals.....	3,489,731	3,802,232	4,238,688	4,379,038

¹ See text below.

In addition to the above income, farmers also received supplementary payments amounting to \$6,100,000 in 1967 as against \$41,300,000 in 1966. These payments include only those made under the Prairie Farm Assistance Act* and other government assistance to farmers who suffered losses as a result of adverse weather conditions. In 1966 these payments included substantial outlays for assistance to farmers in Quebec and Ontario who suffered from extreme drought conditions during 1965; with improved conditions in subsequent years, payments declined. When added together, farm cash receipts from farming operations and supplementary payments totalled \$4,385,200,000 in 1967, 2.5 p.c. above the previous record high of \$4,280,000,000 in 1966.

Field Crops.—During 1967, farmers' total returns from the sale of field crops, cash advances on farm-stored grains in Western Canada, and Canadian Wheat Board payments

* Payments to farmers under the provisions of the Prairie Farm Assistance Act are made from the Prairie Farm Emergency Fund to which farmers contribute by means of a 1-p.c. levy on grain marketings (see also p. 474).

amounted to \$1,837,800,000, nearly 4 p.c. above the 1966 level of \$1,769,400,000. Field crop returns for 1967 accounted for 42.0 p.c. of farmers' total cash receipts from farming operations, about the same proportion as a year earlier. The maintenance of field crop returns at this level was due to higher Canadian Wheat Board participation payments on previous years' grain crops and increased returns from the sale of tobacco, barley, fruits, vegetables, rapeseed, soybeans and sugar beets; lower receipts were obtained for wheat, oats, potatoes, flaxseed and rye.

Marketings of wheat were above those for 1966 during the first half of 1967 but dropped below during the second half, with the result that by the end of the year they were about 12 p.c. lower. Although initial prices were increased by 20 cents a bushel at Aug. 1, 1967, this was insufficient to offset the smaller marketings so that cash returns from this crop at time of delivery were down to \$761,600,000 from \$803,700,000 in 1966. Canadian Wheat Board participation payments paid in 1967 on the 1965 wheat crop pool amounted to \$270,200,000, as against the \$200,200,000 in 1966 on the 1964 pool. When these payments are added to the receipts at time of delivery, total returns from wheat amounted to \$1,031,800,000 in 1967, slightly above the \$1,003,800,000 realized in 1966.

Smaller marketings of oats more than offset an increase of five cents a bushel, in the initial price effective Aug. 1, 1967, and total cash returns at time of delivery declined from \$36,600,000 in 1966 to \$24,700,000 in 1967. Oats participation payments amounted to \$12,300,000 in 1967 and \$6,800,000 in 1966, to give total cash returns from this product of \$37,000,000 in 1967 and \$43,400,000 in 1966. Barley was the only cereal crop for which there was an increase in cash returns from marketings in 1967; marketings were higher as well as prices which averaged above the 1966 level as a result of an increase of 10 cents a bushel in the initial delivery price at Aug. 1, 1967. Total returns to barley producers, including initial returns and participation payments, amounted to \$125,000,000 in 1967, about 18 p.c. above the 1966 estimate of \$105,800,000. Receipts from the sale of tobacco were estimated at \$156,700,000, a 32.9-p.c. increase over the 1966 level of \$117,900,000 as a result of increases in both average prices and total deliveries.

The price of rye averaged about the same in 1967 as in 1966 and that of flaxseed increased but total returns from these crops dropped off sharply as a result of substantial reductions in marketings. There was little change in marketings of potatoes but prices were considerably lower, with the result that total income declined from \$73,700,000 in 1966 to \$53,300,000; the reduction was most evident in Prince Edward Island and New Brunswick.

Livestock and Livestock Products.—Total cash receipts from the sale of livestock and livestock products amounted to \$2,392,700,000 in 1967 compared with \$2,354,700,000 in 1966. Higher returns from the sale of dairy products, cattle and calves more than offset lower returns from hogs, poultry products, sheep and lambs.

Although marketings of cattle and calves were lower in 1967 than in the previous year prices averaged higher and total cash returns from this source amounted to \$922,300,000 as against \$888,300,000 in 1966. Hog marketings were well above the level of 1966 but prices averaged lower and total cash receipts declined from \$421,000,000 to \$408,300,000.

Cash returns to poultry producers were lower for both eggs and poultry meat in 1967. Although production of eggs was well above the level of the previous year, lower price resulted in cash receipts dropping from \$169,800,000 to \$148,600,000. Poultry meat production continued to climb largely as a result of higher output of chicken broilers but price were down more than enough to offset this increased output and total cash returns decline from \$232,600,000 in 1966 to \$224,700,000. Cash receipts from the sale of dairy product (exclusive of supplementary support payments) moved up about \$45,000,000 to \$629,400,000 in 1967; higher average prices more than offset a slight decline in production. Supplementary dairy support payments increased from \$68,500,000 to \$103,200,000 and, when added to sales returns, gave a total of \$732,700,000 for 1967 as against \$653,000,000 in 1966.

8.—Cash Receipts from Farming Operations, by Commodity or Other Source, 1961-67

Item	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000
Wheat.....	738,464	658,842	803,673	761,622
Wheat, Canadian Wheat Board payments.....	199,744	271,974	200,151	270,192
Oats.....	33,207	31,750	36,582	24,709
Oats, Canadian Wheat Board payments.....	10,673	4,707	6,850	12,331
Barley.....	72,129	78,952	83,630	95,726
Barley, Canadian Wheat Board payments.....	14,092	20,093	22,218	29,256
Canadian Wheat Board net cash advance payments.....	-12,123	5,997	-4,667	6,569
Rye.....	8,030	9,489	15,192	7,773
Flaxseed.....	60,957	47,265	62,289	46,223
Rapeseed.....	17,957	26,836	42,718	43,994
Soybeans.....	19,091	14,120	19,793	21,504
Corn.....	21,995	28,174	31,132	31,752
Sugar beets.....	19,891	12,005	12,179	13,051
Potatoes.....	64,909	102,895	73,671	53,308
Fruits.....	73,491	63,957	75,883	81,778
Vegetables.....	79,417	80,624	85,418	93,908
Tobacco.....	97,635	88,404	117,911	156,740
Other crops.....	81,179	86,091	84,772	87,381
Totals, Cash Receipts from Crops.....	1,600,738	1,632,175	1,769,895	1,837,817
Cattle and calves.....	640,507	772,585	888,299	922,333
Hogs.....	321,574	378,715	421,016	408,283
Sheep and lambs.....	9,419	9,435	9,292	8,257
Dairy products.....	533,920	569,588	584,429	629,438
Poultry.....	176,909	196,870	232,569	224,740
Eggs.....	132,566	145,000	169,755	148,648
Other livestock and products.....	41,316	51,591	49,372	50,952
Totals, Cash Receipts from Livestock and Products..	1,856,211	2,113,784	2,354,732	2,392,651
Forest and maple products.....	31,223	32,944	37,560	35,175
Dairy supplementary payments.....	—	16,912	63,591	103,229
Deficiency payments.....	1,559	6,417	8,410	10,166
Totals, Cash Receipts, excl. Supplementary Payments.....	3,489,731	3,802,232	4,238,688	4,379,038
Supplementary payments ¹	8,477	12,762	41,345	6,137
Totals, Cash Receipts.....	3,498,208	3,814,994	4,280,033	4,385,175

¹ See text on p. 483.

Farm Net Income.—Two different estimates of farm net income from farming operations are prepared by DBS. *Realized net income* is obtained by adding together farm cash receipts from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges; this estimate represents the amount of income from farming that operators have left for family living, personal taxes and investment after provision has been made for operating expenses and depreciation charges. *Total net income* is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of grains on farms between the beginning and end of the year; this estimate is used in calculating the contribution of agriculture to national income and for making comparisons with net income of non-farm business enterprises.

For 1967, the estimated *realized net income* of farm operators from farming operations amounted to \$1,664,000,000, 4.1 p.c. below the record high of \$1,735,300,000 established in 1966 but 16.6 p.c. above the average of \$1,426,500,000 for the five-year period 1962-66. During 1967, the increase resulting from record-high cash receipts from farming operations was more than offset by increased farm operating expenses and a decline in supplementary payments.

For 1967, the estimate of *total net income*, which takes into account changes in farm inventories of field crops and livestock, amounted to \$1,529,100,000, 21.2 p.c. below the 1966 record level of \$1,940,700,000 and 1.5 p.c. below the average of \$1,553,100,000 for the period 1962-66. Although cash receipts were at an all-time high level in 1967, inventories of field crops declined substantially from 1966. Supplementary payments were also lower, particularly in Quebec and Ontario, and operating expenses continued to rise.

During 1967, total operating expenses and depreciation charges reached a new high of \$3,222,200,000 as against \$3,006,800,000 for 1966. With few exceptions, farmers' outlays for each of the items considered in farm operating expenses were higher, the most significant exception being the sharp drop in rental payments from \$158,500,000 to \$136,400,000. All of the entire decline occurred in Saskatchewan and Alberta as a result of smaller grain crops and the consequent reduction in share-rental payments. The greatest absolute increase in farmers' outlay for any single item was for livestock feeds, an expenditure that rose from \$505,700,000 to \$561,500,000 as a result of a continuing increase in quantities purchased and higher prices. Outlays for fertilizer and lime showed the greatest percentage increase in 1967; higher prices and a marked gain in quantities used pushed this expenditure up 17 p.c. above that of a year earlier. Most of this increase took place in the Prairie Provinces where fertilizer expenditures increased from \$62,000,000 to \$83,800,000. For the first time since estimates have been prepared, fertilizer costs in this area have exceeded those for Ontario. Costs of operating farm machinery continued to move up as prices for petroleum products advanced. Total interest payments on farm indebtedness increased still further during 1967 as farmers continued to expand their use of credit. No significant changes appeared to have taken place in the hired farm labour force in 1967 but wages reached new high levels.

9.—Net Income of Farm Operators from Farming Operations, by Item and by Province, 1964-67

(Exclusive of Newfoundland)

NOTE.—Includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

Item and Province	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000
Item				
1. Cash receipts from farming operations.....	3,489,731	3,802,232	4,238,688	4,379,038
2. Income in kind.....	395,142	429,674	461,998	500,967
3. Supplementary payments.....	8,477	12,762	41,345	6,137
4. Realized gross income (Items 1+2+3).....	3,893,350	4,244,668	4,742,031	4,886,142
5. Operating and depreciation charges.....	2,530,346	2,719,859	3,006,753	3,222,174
6. Realized net income (Items 4-5).....	1,363,004	1,524,809	1,735,278	1,663,968
7. Value of inventory changes.....	-94,904	44,707	205,374	-134,895
8. Total gross income (Items 4+7).....	3,798,446	4,289,375	4,947,405	4,751,247
Totals, Net Income (Items 8-5).....	1,268,100	1,569,516	1,940,652	1,529,073
Province				
Prince Edward Island.....	12,535	15,657	15,641	6,175
Nova Scotia.....	16,392	18,242	18,330	15,014
New Brunswick.....	17,019	24,595	21,115	10,651
Quebec.....	131,682	152,198	209,522	176,300
Ontario.....	301,068	344,471	455,524	376,354
Manitoba.....	156,243	168,246	154,584	174,987
Saskatchewan.....	326,319	478,987	590,691	387,749
Alberta.....	236,505	297,311	385,449	297,188
British Columbia.....	70,336	69,809	89,796	84,625

Subsection 2.—Volume of Agricultural Production

The index of physical volume of agricultural production for Canada is estimated at 159.6 for 1967, 12.5 p.c. below the record level of 182.3 established in 1966. This is the fourth highest estimate of agricultural production on record, being exceeded by the level of 162.1 for each of 1963 and 1965 as well as by that of 1966. The drop between 1966 and 1967 can be attributed, for the most part, to smaller grain crops in Saskatchewan and Alberta; to a much lesser extent it reflects reduced output of potatoes and poultry. Production of cattle, vegetables and dairy products remained almost unchanged and production of hogs, eggs, calves and fruits increased.

On a provincial basis, the greatest percentage declines in production occurred in Saskatchewan and Alberta reflecting the substantial decline in grain production followed by New Brunswick and Prince Edward Island where there were smaller potato crops. Production changes of less than 1 p.c. occurred in Ontario and British Columbia. With few exceptions, changes in the production of individual items in Ontario tended to move within fairly narrow limits around the levels of 1966, although some increase occurred in the production of corn and eggs and some decline in potatoes and poultry. In British Columbia, lower production of grains, potatoes and cattle almost completely offset increased output of hogs, fruits, calves and poultry products.

For the remaining provinces, agriculture production in 1967 was higher than in 1966. The increases amounted to just over 1 p.c. in Nova Scotia and about 4 p.c. in Quebec and Manitoba. Nova Scotia reported lower egg output and higher production for cattle and fruits. In Quebec production was lower for potatoes and poultry but higher for livestock, eggs, fruits and vegetables. In Manitoba the increase reflects, mainly, larger crops of grain with less important increases for livestock and eggs; some decline occurred in output of potatoes and of poultry.

The index of physical volume of agricultural production has been developed as an index of unduplicated gross farm production, provision having been made to avoid double-counting of farm output. Within a province, such double-counting could occur when feed grains, credited to field crop production, are fed to livestock and appear later as livestock and livestock products. Interprovincially, this duplication could occur when feed grains produced in one province are fed in another, and when feeder cattle raised in one section of the country are shipped to another for finishing.

10.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1958-67

(1949=100. Exclusive of Newfoundland)

NOTE.—For a description of the index, methods and coverage, see DBS publication *Index of Farm Production 1966* (Catalogue No. 21-203).

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1958	98.7	109.4	85.7	123.8	128.0	127.0	124.2	150.4	120.2	128.2
1959	90.5	111.4	80.0	123.8	121.7	120.0	128.3	154.9	126.6	127.3
1960	89.2	112.3	84.7	124.1	122.8	123.0	160.0	146.3	130.7	133.7
1961	93.0	118.9	87.1	133.3	134.1	83.6	73.9	144.9	139.2	116.1
1962	94.0	124.2	89.3	142.4	139.5	146.3	165.3	157.4	148.0	147.6
1963	94.7	126.4	85.9	143.1	140.4	127.3	221.6	182.0	149.5	162.1
1964	103.9	124.3	91.0	143.6	147.8	155.6	149.1	174.7	164.0	151.2
1965	97.4	125.0	89.6	148.2	148.2	164.0	183.9	188.3	155.9	162.1
1966	111.3	130.5	100.4	155.6	155.6	157.4	237.6	219.0	174.0	182.3
1967	103.2	131.9	91.8	161.7	154.5	164.0	153.4	184.8	174.4	159.6

Subsection 3.—Field Crops*

The weather was quite variable for field crop production in Canada during 1967. In the Prairie Provinces cold, wet weather during the first half of May delayed seeding operations in nearly all regions and by mid-May seeding was only 8 p.c. completed, compared with the five-year average of 31 p.c. However, by the end of May seeding operations were nearing completion in most areas of the prairies due to the presence of good drying weather. Throughout most of June and July rainfall was light in many areas and by mid-July crops were deteriorating throughout almost all of Saskatchewan, the southwest corner of Manitoba, east-central and northeast Alberta and in the Peace River District. During August and September favourable weather rapidly matured grain crops and permitted completion of the harvest in record time. Despite the season having been one of the driest in many areas in at least 10 years, crop outturns were surprisingly large, of high quality and of good bushel weight.

In the Central Provinces of Ontario and Quebec, cool weather delayed somewhat the seeding of spring grains. In Ontario, despite this delay and wet weather during the growing season, the bulk of spring-sown grains and the winter wheat crop were harvested in good condition and average yields were obtained. Normal conditions for much of Quebec resulted in excellent growth and early harvesting; crop yields were near average levels and of satisfactory quality. In the Maritimes, after good growth in mid-season, wet harvesting weather reduced both yield and quality of most crops. In British Columbia, conditions were generally dry throughout both the growing and harvest periods and yields of cereals and forages in most areas, particularly in the Peace River Block, were below average.

The 1967 index of field crop production for Canada (1949=100) at 163.9 was well below the record 203.0 reached in 1966 and was little changed from the 1956 index at 162.9. Manitoba had an index level of 161.1 which exceeded the 1966 figure of 159.5 but fell short of the record 172.5 of 1965. The index for Saskatchewan at 171.7 was much below the record 274.2 achieved in 1966, mainly because of the reduced wheat crop. The Alberta index also declined from a record 252.1 in 1966 and the previous high of 214.5 in 1965 to 197.1 in 1967. The British Columbia index at 133.8 was below the 1966 record 155.9 but was above the 1965 index of 133.4.

The 1967 field crop production index in Eastern Canada showed increases for Ontario and Quebec and decreases for all three Maritime Provinces compared with 1966. In Ontario, larger grain crops and a record corn crop helped to raise the index to a new high of 165.9 from 156.8 in 1966. Quebec's index at 132.0 exceeded the 1966 level of 128.2 but remained below the record of 138.3 set in 1951. The 1967 indexes for Prince Edward Island, Nova Scotia and New Brunswick, with 1966 levels in brackets, were 97.2 (117.1), 58.4 (70.6) and 83.6 (102.8), respectively.

Canada's 1967 wheat crop was estimated at 592,920,000 bu., a decline of 28 p.c. from the record 1966 harvest of 827,338,000 bu. but 15 p.c. above the ten-year (1956-65) average of 514,991,000 bu. Average yield per acre decreased about 29 p.c. from 1966 and more than offset an increase of 1 p.c. in seeded acreage. The average protein content of the 1967 crop of hard red spring wheat was 13.8 p.c. compared with 13.2 p.c. obtained in 1966 and the average of 13.6 p.c. for all western spring wheat crops for the period 1927-66.

Supplies of Canadian feed grains (corn, oats, barley, rye, mixed grains and buckwheat) in the crop year 1967-68 were 8 p.c. below the previous year, as increases in opening stocks and imports from the United States did not quite offset the reduction in Canadian production. Compared with 1966-67, supplies of oats (Aug. 1, 1967 carryover of 109,791,000 bu. plus the 1967 production of 304,178,000 bu.) were down 18 p.c.; supplies of barley (carryover of 131,751,000 bu. plus a crop of 248,662,000 bu.) were 5 p.c. lower; and supplies of rye totalling 20,276,000 bu. were down 27 p.c. The 1967 crop of mixed grains, at 76,427,000 bu., was down from the 81,443,000 bu. in 1966 and production of grain corn at 74,083,000 bu.

* The supply and disposition of the major Canadian grains is dealt with in Chapter XXI, Pt. I, Sect. 2, under the heading of "The Grain Trade, 1966-67".

reached an all-time high. Net feed-grain supplies (total supplies less estimated exports, seed requirements and other domestic uses) amounted to 18,300,000 tons, 6 p.c. below the 1966-67 total of 19,500,000 tons but 11 p.c. above the 1956-65 average of 16,500,000 tons.

Acreages, yields and prices of the principal field crops in 1967 are shown in Table 11, compared with the two preceding years and 1960-64 averages.

11.—Acreages, Yields and Prices of Principal Field Crops 1965-67 with Average for 1960-64
(Exclusive of Newfoundland)

Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹	Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹
	'000 acres	bu.	'000 bu.	\$ per bu.	\$'000		'000 acres	bu.	'000 bu.	\$ per bu.	\$'000
Wheat—						Mixed Grains—					
Av. 1960-64	26,788	20.1	538,317	1.66	891,534	Av. 1960-64	1,491	44.9	66,883	0.86	57,799
1965	28,301	22.9	649,412	1.68	1,089,458	1965	1,640	49.3	80,799	0.88	71,229
1966	29,692	27.9	827,338	1.76	1,457,123	1966	1,767	46.1	81,443	0.93	76,112
1967	30,121	19.7	592,920	2	2	1967	1,668	45.8	76,427	2	2
Oats—						Flaxseed—					
Av. 1960-64	9,210	42.7	393,593	0.67	265,182	Av. 1960-64	1,941	9.7	18,907	2.97	56,136
1965	8,362	47.8	399,983	0.73	293,314	1965	2,315	12.6	29,176	2.71	79,026
1966	7,924	47.3	374,678	0.74	277,843	1966	1,918	11.5	22,020	2.72	59,902
1967	7,436	40.9	304,178	2	2	1967	1,023	9.2	9,378	2	2
Barley—						Potatoes—					
Av. 1960-64	5,869	29.4	172,337	0.94	161,289	Av. 1960-64	290	cwt.	'000 cwt.	\$ per cwt.	
1965	6,121	35.7	218,300	1.03	225,208	1965	295	156.6	45,415	1.92	87,256
1966	7,461	40.4	301,235	1.05	315,940	1966	319	155.0	45,786	2.59	118,490
1967	8,115	30.6	248,662	2	2	1967	304	171.5	54,679	1.49	81,588
Rye—						Tame Hay—					
Av. 1960-64	631	17.5	11,019	1.05	11,613	Av. 1960-64	12,380	1.78	21,999	16.27	357,900
1965	799	22.3	17,834	1.05	18,718	1965	12,815	1.67	21,387	20.82	445,308
1966	726	23.7	17,220	1.09	18,788	1966	13,154	1.98	26,049	18.02	469,284
1967	685	17.5	11,981	2	2	1967	12,902	1.97	25,385	2	2

¹ Gross value of farm production; does not represent cash income from sales.

² Not available at time of going to press; will be published in one of the regularly scheduled crop reports and in the *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1966 and 1967, with Average for 1960-64

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1960-64	1966	1967	Average 1960-64	1966	1967	Average 1960-64	1966
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
Wheat	26,788	29,692	30,121	538,317	827,338	592,920	891,534	1,457,123
Prince Edward Island	4	2	2	118	75	46	198	131
Nova Scotia	1	1	2	30	54	66	50	92
New Brunswick	2	4	4	65	134	110	110	234
Quebec	13	29	29	341	768	754	572	1,329
Ontario								
Winter	485	341	400	17,817	15,200	15,480	28,271	27,512
Spring	20	22	13	498	627	364	770	1,135
Manitoba	3,059	3,255	3,520	65,200	79,000	90,000	108,992	140,620
Saskatchewan	17,276	19,405	19,670	331,800	537,000	339,000	553,428	950,490
Alberta	5,834	6,506	6,350	120,000	191,000	145,000	195,538	330,430
British Columbia	94	127	101	2,460	3,480	2,100	3,604	5,150

¹ Values for 1967 not available at time of going to press; see footnote ², Table 11.

**12.—Acreages, Production and Values of Principal Field Crops, by Province, 1966 and 1967,
with Average for 1960-64—continued**

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1960-64	1966	1967	Average 1960-64	1966	1967	Average 1960-64	1966
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
Oats	9,210	7,924	7,436	393,593	374,678	304,178	265,182	277,943
Prince Edward Island...	94	86	80	4,723	5,386	3,496	3,776	4,309
Nova Scotia.....	34	26	24	1,508	1,460	912	1,367	1,358
New Brunswick.....	97	73	74	4,224	3,666	2,871	3,432	3,079
Quebec.....	1,222	1,002	1,018	50,047	43,186	41,025	43,743	38,436
Ontario.....	1,692	1,219	1,083	87,911	59,243	58,374	67,444	49,172
Manitoba.....	1,570	1,530	1,600	60,800	64,000	66,000	36,780	48,000
Saskatchewan.....	2,083	1,838	1,530	79,200	93,000	49,000	46,406	63,240
Alberta.....	2,334	2,082	1,960	101,000	101,000	80,000	59,552	67,670
British Columbia.....	85	69	67	4,179	3,737	2,500	2,681	2,579
Barley	5,869	7,461	8,115	172,337	301,235	248,662	161,289	315,940
Prince Edward Island...	6	12	18	282	684	558	298	739
Nova Scotia.....	1	4	6	52	182	195	60	229
New Brunswick.....	3	6	9	127	249	270	147	309
Quebec.....	19	16	17	700	574	643	813	700
Ontario.....	96	265	285	4,217	11,236	13,196	4,497	13,708
Manitoba.....	659	875	970	17,200	28,000	33,000	16,418	30,800
Saskatchewan.....	1,850	2,255	2,350	49,600	96,000	63,000	45,532	100,800
Alberta.....	3,147	3,880	4,280	97,400	159,000	134,000	91,172	163,770
British Columbia.....	87	150	180	2,759	5,310	3,800	2,351	4,885
Fall Rye	534	623	601	9,749	15,214	10,864	10,292	16,617
Quebec.....	4	5	5	85	115	115	96	129
Ontario.....	62	47	49	1,507	1,309	1,303	1,630	1,558
Manitoba.....	99	98	140	2,039	2,344	2,650	2,171	2,532
Saskatchewan.....	222	328	269	3,650	7,600	4,000	3,871	8,208
Alberta.....	146	143	135	2,416	3,750	2,700	2,472	4,088
British Columbia.....	2	3	3	52	96	96	52	102
Spring Rye	98	103	84	1,270	2,006	1,117	1,321	2,171
Manitoba.....	3	3	1	50	56	17	52	60
Saskatchewan.....	69	70	58	880	1,400	700	916	1,512
Alberta.....	26	29	25	340	550	400	352	599
All Rye	631	726	685	11,019	17,220	11,981	11,613	18,788
Quebec.....	4	5	5	85	115	115	96	129
Ontario.....	62	47	49	1,507	1,309	1,303	1,630	1,558
Manitoba.....	102	100	141	2,089	2,400	2,667	2,223	2,592
Saskatchewan.....	290	398	327	4,530	9,000	4,700	4,787	9,720
Alberta.....	171	172	160	2,756	4,300	3,100	2,825	4,687
British Columbia.....	2	3	3	52	96	96	52	102
Peas	61	61	47	1,150	1,094	1,115	2,509	2,676
Quebec.....	2	1	2	34	30	37	141	123
Ontario.....	3	2	3	55	45	51	141	124
Manitoba.....	43	46	30	805	731	700	1,658	1,645
Saskatchewan.....	3	1	1	49	25	17	93	61
Alberta.....	8	8	10	143	191	274	338	573
British Columbia.....	3	2	2	64	72	36	139	150
Beans	70	118	86	1,467	2,932	1,435	6,068	12,019
Quebec.....	1	1	1	18	19	18	83	76
Ontario.....	69	117	85	1,449	2,913	1,417	5,985	11,943
Soybeans	224	279	290	6,042	9,012	8,091	15,095	27,036
Ontario.....	224	279	290	6,042	9,012	8,091	15,095	27,036
Buckwheat	57	55	76	1,284	1,164	1,292	1,502	1,591
New Brunswick.....	3	2	2	103	77	70	121	92

¹ Values for 1967 not available at time of going to press; see footnote ², Table 11.

12. --Acreages, Production and Values of Principal Field Crops, by Province, 1966 and 1967, with Average for 1960-64—continued

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1960-64	1966	1967	Average 1960-64	1966	1967	Average 1960-64	1966
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000
Buckwheat—concluded								
Quebec.....	17	16	13	435	416	310	513	503
Ontario.....	21	14	15	489	331	387	555	367
Manitoba.....	16	23	45	257	340	525	314	629
Mixed Grains	1,491	1,767	1,668	66,883	81,443	76,427	57,799	76,112
Prince Edward Island.....	50	48	50	2,567	3,126	2,230	2,309	2,751
Nova Scotia.....	8	10	13	368	573	468	386	642
New Brunswick.....	8	10	8	337	475	304	332	518
Quebec.....	100	102	110	4,144	4,427	4,422	4,537	5,268
Ontario.....	732	845	815	39,745	40,898	45,477	34,185	38,563
Manitoba.....	132	178	178	4,130	6,845	6,700	3,355	6,503
Saskatchewan.....	111	153	128	3,150	6,671	3,600	2,390	5,470
Alberta.....	347	410	361	12,261	18,163	13,000	10,121	15,802
British Columbia.....	4	5	5	181	265	226	184	305
Flaxseed	1,941	1,918	1,023	18,907	22,020	9,378	56,136	59,902
Quebec.....	21	18	17	303	285	253	939	775
Ontario.....	22	14	7	394	215	112	1,160	568
Manitoba.....	793	1,107	660	7,680	10,000	5,700	22,593	27,000
Saskatchewan.....	713	429	193	6,380	6,000	1,600	18,982	16,380
Alberta.....	388	347	145	4,120	5,500	1,700	12,374	15,125
British Columbia.....	3	2	1	29	20	13	87	54
Rapeseed	623	1,525	1,620	9,958	25,800	24,700	21,524	13,760
Manitoba.....	45	170	145	730	2,100	2,300	1,698	5,145
Saskatchewan.....	321	731	600	5,112	12,700	10,200	10,529	31,115
Alberta.....	257	624	875	4,116	11,000	12,200	9,296	27,500
Sunflower Seed	42	53	46	'000 lb. 28,281	'000 lb. 32,790	'000 lb. 36,010	1,309	1,906
Manitoba.....	33	43	44	23,892	28,000	35,200	1,124	1,680
Saskatchewan.....	—	7	2	—	3,350	810	—	168
Alberta.....	4	3	—	3,069	1,440	—	121	58
Mustard Seed	109	201	221	60,503	165,400	149,900	2,389	7,695
Manitoba.....	13	32	29	8,803	17,300	20,300	425	882
Saskatchewan.....	36	81	78	23,040	69,000	52,650	800	3,174
Alberta.....	60	88	114	28,660	79,100	76,950	1,164	3,639
Shelled Corn	500	807	876	'000 bu. 35,546	'000 bu. 66,328	'000 bu. 74,083	45,675	97,536
Quebec.....	—	18	20	—	1,117	1,558	—	1,676
Ontario.....	496	786	850	35,398	65,081	72,250	45,502	95,669
Manitoba.....	4	3	6	148	130	275	172	191
Potatoes	290	319	304	'000 cwt. 45,415	'000 cwt. 54,679	'000 cwt. 46,743	87,256	81,588
Prince Edward Island.....	42	52	51	7,791	10,776	9,607	12,999	11,746
Nova Scotia.....	7	6	5	926	973	693	1,934	1,605
New Brunswick.....	52	65	62	10,398	14,450	12,585	16,654	15,172
Quebec.....	74	75	71	9,471	8,770	7,938	18,047	15,084
Ontario.....	51	52	48	9,645	10,003	7,344	20,412	15,605
Manitoba.....	20	24	26	1,899	3,062	2,900	3,498	4,899
Saskatchewan.....	11	8	8	741	619	576	1,696	1,548
Alberta.....	21	25	22	2,541	3,907	3,200	6,074	9,572
British Columbia.....	11	10	10	2,003	2,119	1,900	5,943	6,357
Field Roots	25	15	14	'000 tons 274	'000 tons 195	'000 tons 171	5,705	4,890
Prince Edward Island.....	3	2	2	41	25	21	820	565
Nova Scotia.....	2	1	1	27	18	12	510	551
New Brunswick.....	2	1	1	18	14	11	343	346

¹ Values for 1967 not available at time of going to press; see footnote ², Table 11.

12.—Acreages, Production and Values of Principal Field Crops, by Province, 1966 and 1967, with Average for 1960-64—concluded

Field Crop and Province	Area			Total Production			Gross Farm Value ¹	
	Average 1960-64	1966	1967	Average 1960-64	1966	1967	Average 1960-64	1966
	'000 acres	'000 acres	'000 acres	'000 tons	'000 tons	'000 tons	\$'000	\$'000
Field Roots—concluded								
Quebec.....	6	4	4	45	32	37	886	672
Ontario.....	11	7	6	143	106	90	3,145	2,756
Tame Hay.....	12,380	13,154	12,902	21,999	26,049	25,385	357,900	469,284
Prince Edward Island...	180	182	180	329	353	367	4,214	4,589
Nova Scotia.....	233	226	218	495	520	458	7,752	7,540
New Brunswick.....	280	243	234	538	474	482	7,689	7,110
Quebec.....	3,363	3,378	3,353	6,050	6,688	7,209	96,468	124,397
Ontario.....	3,335	3,418	3,440	7,124	7,896	8,944	114,462	153,972
Manitoba.....	999	1,065	1,052	1,586	2,098	1,600	23,448	34,617
Saskatchewan.....	1,078	1,246	1,100	1,398	2,131	1,225	21,666	34,096
Alberta.....	2,511	2,938	2,875	3,570	4,730	4,000	62,643	78,045
British Columbia.....	402	458	450	908	1,159	1,100	19,557	24,918
Fodder Corn.....	412	578	596	4,602	6,643	7,328	25,296	44,404
Quebec.....	55	74	76	615	922	953	3,893	6,684
Ontario.....	314	454	480	3,706	5,357	6,096	19,364	34,928
Manitoba.....	37	37	26	215	228	140	1,519	1,596
Saskatchewan.....	3	6	7	11	27	20	140	324
British Columbia.....	4	6	7	54	109	119	380	872
Sugar Beets.....	90	81	83	1,179	1,167	1,081	18,795	19,126
Quebec.....	9	8	9	121	130	133	1,843	2,385
Ontario.....	16	12	14	260	216	287	3,933	3,018
Manitoba.....	25	23	27	255	245	227	3,956	4,106
Alberta.....	41	38	34	542	576	434	9,063	9,617

¹ Values for 1967 not available at time of going to press; see footnote ², Table 11.

13.—Acreages and Production of Grain in the Prairie Provinces, 1963-67

Grain	1963	1964	1965	1966	1967
ACREAGES					
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
Wheat.....	26,996	29,080	27,790	29,166	29,570
Oats.....	6,260	5,054	5,645	5,450	5,090
Barley.....	5,922	5,217	5,741	7,010	7,600
Rye.....	632	635	743	671	628
Flaxseed.....	1,629	1,916	2,265	1,883	998
Rapeseed.....	478	791	1,435	1,525	1,620
PRODUCTION					
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Wheat.....	703,000	578,000	632,000	807,000	574,000
Oats.....	304,000	206,000	272,000	258,000	195,000
Barley.....	213,000	157,000	202,000	283,000	230,000
Rye.....	12,080	10,800	16,400	15,700	10,467
Flaxseed.....	20,300	19,400	28,400	21,500	9,000
Rapeseed.....	8,360	13,230	22,600	25,800	24,700

Stocks of Canadian Grain.—Table 14 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1965-67, with averages for the five-year periods 1955-59 and 1960-64. Stocks in Canada are separated into those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

14.—Carryover of Canadian Grain as at July 31, 1965-67, with Averages for 1955-59 and 1960-64

Grain and Year	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
Av. 1955-59.....	617,264,667	616,947,244	401,923,244	215,024,000	211,600,000	235,770,759
Av. 1960-64.....	509,134,890	509,134,890	397,302,890	111,832,000	109,500,000	218,417,272
1965.....	513,024,073	513,024,073	403,924,073	109,100,000	107,000,000	238,611,266
1966.....	420,122,308	420,122,308	320,122,308	100,000,000	98,000,000	179,518,503
1967.....	576,750,535	576,750,535	371,750,535	205,000,000	202,000,000	197,682,091
Oats—						
Av. 1955-59.....	140,236,549	140,051,508	43,511,508	96,540,000	78,800,000	28,289,269
Av. 1960-64.....	124,946,746	124,946,746	34,586,746	90,360,000	68,600,000	23,966,406
1965.....	130,120,562	130,120,562	39,420,562	90,700,000	68,000,000	23,648,678
1966.....	127,162,973	127,162,973	36,162,973	91,000,000	67,000,000	20,176,646
1967.....	109,791,105	109,791,105	28,791,105	81,000,000	65,000,000	18,647,406
Barley—						
Av. 1955-59.....	118,906,634	118,783,588	60,532,588	58,251,000	56,000,000	37,528,726
Av. 1960-64.....	101,273,289	101,214,364	52,148,364	49,066,000	47,000,000	33,764,874
1965.....	88,776,413	88,776,413	52,976,413	35,800,000	34,000,000	35,148,419
1966.....	97,752,538	97,752,538	64,752,538	33,000,000	31,000,000	44,347,245
1967.....	131,751,170	131,751,170	64,751,170	67,000,000	63,000,000	41,091,566
Rye—						
Av. 1955-59.....	13,467,828	13,237,663	5,078,663	8,159,000	7,820,000	2,327,160
Av. 1960-64.....	5,834,066	5,700,003	3,742,003	1,958,000	1,856,000	1,710,161
1965.....	8,501,805	7,927,959	6,227,959	1,900,000	1,900,000	2,556,448
1966.....	10,566,888	10,215,040	7,815,040	2,400,000	2,400,000	2,949,691
1967.....	8,295,171	7,833,494	5,633,494	2,200,000	2,200,000	2,337,120
Flaxseed—						
Av. 1955-59.....	5,068,048	5,068,048	3,752,448	1,315,600	1,296,000	913,866
Av. 1960-64.....	5,642,402	5,642,402	4,522,402	1,120,000	1,110,000	1,406,139
1965.....	7,141,165	7,141,165	6,141,165	1,000,000	1,000,000	2,256,167
1966.....	11,141,301	11,141,301	8,941,301	2,200,000	2,200,000	3,374,338
1967.....	11,830,585	11,830,585	10,330,585	1,500,000	1,500,000	3,121,861

Subsection 4.—Livestock and Poultry

Livestock.—Marketings of all classes of livestock except cattle increased in 1967. An absence of profitable export outlets for both live and dressed products left more meat available for domestic use. Generally the situation was favourable, especially for cattle and calves which maintained strong prices for most of the year. Sharply increased marketings, however, lowered prices for hogs below the exceptionally high 1966 levels but in line with the previous five-year average.

Inspected slaughter of cattle in 1967 at 2,641,788 head was 2.3 p.c. lower than the 2,705,139 head in 1966; inspected calf slaughter at 738,815 was also down 3.5 p.c. The lower slaughter resulted in increased prices and the all-Canada average for cattle in 1967 was \$23.25 compared with \$21.80 in 1966. Exports of beef cattle were only 128,524, a 62-p.c. drop from 1966. At June 1, 1967, cattle and calves on farms numbered about 12,781,000, about 1 p.c. fewer than a year earlier. The numbers of milk cows and beef cows were down slightly but the largest decreases occurred in numbers of steers and dairy heifers.

There was an almost 20-p.c. increase in the number of hog carcasses graded in 1967 over 1966—8,186,356 compared with 6,860,030. Record high prices in 1966 induced the greatly increased 1967 production which, in turn, caused the average price paid for all hogs to decline by \$5.50 to \$28.55; the average for grade A hogs marketed at public stockyards was \$29.55 compared with \$35.05 in 1966. At June 1, 1967, the number of hogs on farms was estimated at 6,012,000, up 11 p.c. from 5,401,300 at the same date of 1966 and the highest since 1959. Sows and gilts for breeding were estimated at 690,800, up 7 p.c.

Inspected slaughter of sheep and lambs in 1967 was 325,468, down fractionally from 327,621 in 1966. Lamb prices showed less change from the previous year than other classes of livestock; the average for all sheep and lambs was \$21.90 per cwt., 65 cents below 1966. Sheep and lambs exported numbered 9,901 compared with 3,110 in 1966. At June 1, 1967, sheep and lambs on farms numbered 962,500, 4 p.c. fewer than at the same date of 1966; the breeding flocks of sheep (one year old and over) were estimated to number 498,200 and 509,100 in the same comparison.

The Canada Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1958 are given in Table 15. Local wholesale butcherings and slaughterings carried out by retail butchers and by farmers for their own use are not included. Actually, the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 15 are fairly inclusive.

15.—Livestock Slaughtered at Inspected Establishments, 1958-67

(Exclusive of Newfoundland)

Year	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.
1958.....	1,889,280	784,767	548,976	5,963,928
1959.....	1,744,185	676,571	569,746	8,020,766
1960.....	1,941,703	712,100	562,678	6,182,315
1961.....	2,041,473	890,286	633,347	5,849,875
1962.....	2,028,159	710,229	567,463	6,031,933
1963.....	2,126,716	671,390	532,015	5,909,506
1964.....	2,422,260	750,319	497,686	6,627,600
1965.....	2,734,514	894,728	409,783	6,421,226
1966.....	2,705,139	765,596	327,621	6,129,632
1967.....	2,641,788	738,815	325,468	7,336,912

16.—Livestock on Farms and Average Value per Head, by Province, as at June 1, 1956, 1966 and 1967

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	Livestock on Farms			Value per Head		
	1956	1966 ¹	1967	1956	1966 ¹	1967
	'000	'000	'000	\$	\$	\$
Prince Edward Island—						
Horses.....	14.6	5.0	4.5	91	140	143
Milk cows ²	43.8	37.3	36.5	131	196	217
Other cattle.....	79.9	87.9	85.5	62	98	108
Sheep.....	33.4	15.1	14.5	15	16	19
Swine.....	46.7	82.9	95.0	25	36	33
Nova Scotia—						
Horses.....	17.9	5.7	5.5	119	192	189
Milk cows ²	82.8	52.4	50.0	124	186	203
Other cattle.....	104.6	95.2	96.0	61	102	111
Sheep.....	83.2	38.8	38.0	15	15	17
Swine.....	32.7	57.5	65.0	26	35	33
New Brunswick—						
Horses.....	19.3	6.1	5.8	119	212	211
Milk cows ²	85.6	52.2	48.5	130	180	189
Other cattle.....	98.0	84.3	82.5	58	98	109
Sheep.....	64.0	28.2	27.0	15	16	17
Swine.....	53.8	34.1	41.0	26	33	33
Quebec—						
Horses.....	163.5	62.1	57.0	148	208	226
Milk cows ²	1,054.3	995.3	1,004.0	130	200	227
Other cattle.....	947.9	802.3	792.0	55	90	100
Sheep.....	338.6	112.4	106.0	14	16	16
Swine.....	887.1	1,173.7	1,330.0	25	33	32
Ontario—						
Horses.....	139.6	75.4	74.0	109	180	191
Milk cows ²	1,025.9	908.7	925.0	155	249	282
Other cattle.....	1,875.8	2,228.3	2,240.0	93	138	150
Sheep.....	393.8	265.4	259.0	19	22	22
Swine.....	1,548.3	1,935.6	2,040.0	26	40	33
Manitoba—						
Horses.....	75.1	37.0	37.0	82	121	124
Milk cows ²	223.0	150.1	142.0	141	204	224
Other cattle.....	648.5	1,001.1	970.0	86	136	145
Sheep.....	73.1	50.5	46.0	15	17	18
Swine.....	310.5	499.2	578.0	22	34	31
Saskatchewan—						
Horses.....	170.7	74.7	69.0	65	110	118
Milk cows ²	272.2	153.8	145.0	140	216	227
Other cattle.....	1,596.8	2,244.2	2,223.0	90	144	152
Sheep.....	142.7	127.8	120.0	14	19	18
Swine.....	591.9	488.2	565.0	21	33	30
Alberta—						
Horses.....	154.6	93.7	90.0	64	120	132
Milk cows ²	282.2	243.0	235.0	148	217	235
Other cattle.....	2,187.0	3,196.7	3,170.0	90	140	151
Sheep.....	404.8	301.4	287.0	16	19	17
Swine.....	1,211.5	1,092.7	1,254.0	23	35	30
British Columbia—						
Horses.....	26.8	26.5	27.0	77	144	159
Milk cows ²	80.2	81.1	82.0	139	234	253
Other cattle.....	332.7	464.9	454.0	86	134	144
Sheep.....	86.1	65.9	65.0	17	19	21
Swine.....	48.4	37.4	44.0	27	38	33
Totals—						
Horses.....	782.1	386.2	369.8	95	148	159
Milk cows ²	3,160.0	2,673.9	2,668.0	141	220	246
Other cattle.....	7,851.2	10,201.9	10,113.0	85	134	145
Sheep.....	1,619.7	1,005.5	962.5	16	19	19
Swine.....	4,730.9	5,401.3	6,012.0	24	36	32

¹ Census figures.

² Cows and heifers, two years old or over, kept for milk purposes.

Poultry.—Poultry on farms and their values in 1965-67 are given in Table 17; production and consumption of poultry meat are included in Table 18.

17.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1965-67

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		All Poultry	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
Newfoundland.....	..	..	..	..	..	..	..	..	..	..
Prince Edward Island... 1965	435	448	10	51	6	22	2	5	453	526
1966	352	400	4	24	6	21	3	6	366	451
1967	334	405	4	25	5	19	3	6	346	455
Nova Scotia..... 1965	2,210	2,403	70	360	1	4	1	2	2,282	2,769
1966	2,801	3,170	38	170	1	5	1	2	2,842	3,347
1967	2,724	3,183	67	308	2	6	1	2	2,793	3,499
New Brunswick..... 1965	1,150	1,346	31	161	1	3	1	2	1,182	1,512
1966	1,339	1,508	57	279	1	4	1	1	1,398	1,792
1967	1,354	1,524	51	252	1	4	1	2	1,407	1,782
Quebec..... 1965	14,860	13,401	900	4,068	8	28	60	116	15,828	17,613
1966	18,400	18,846	1,550	6,627	7	25	57	114	20,013	25,612
1967	19,985	20,164	1,540	7,269	7	25	59	123	21,591	27,581
Ontario..... 1965	23,665	23,294	3,400	16,286	55	217	140	287	27,260	40,084
1966	25,309	25,110	4,044	19,320	61	236	136	275	29,550	44,941
1967	27,350	29,517	3,800	17,366	57	215	126	247	31,333	47,345
Manitoba..... 1965	5,820	4,459	1,000	3,760	100	291	40	67	6,960	8,577
1966	5,844	5,229	1,091	4,394	134	430	31	58	7,101	10,111
1967	6,330	5,595	925	3,737	135	444	30	57	7,420	9,833
Saskatchewan..... 1965	5,300	3,412	770	2,888	30	97	50	95	6,150	6,492
1966	5,393	4,102	777	3,345	38	141	71	142	6,278	7,730
1967	5,700	4,099	670	2,854	40	149	70	149	6,490	7,251
Alberta..... 1965	7,800	5,563	900	3,681	75	236	80	148	8,855	9,628
1966	8,440	6,461	951	4,254	80	280	92	190	9,563	11,185
1967	8,400	6,713	1,100	5,016	80	283	85	182	9,665	12,194
British Columbia..... 1965	6,200	6,459	525	2,678	8	31	25	52	6,758	9,220
1966	7,346	7,758	455	2,209	12	42	19	38	7,831	10,047
1967	7,925	8,617	600	3,174	10	40	22	50	8,557	11,881
Totals..... 1965	67,440	60,785	7,606	33,933	284	929	399	774	75,729	96,421
1966	75,224	72,584	8,968	40,622	339	1,184	410	826	84,940	115,216
1967	80,102	79,817	8,758	40,001	336	1,185	396	818	89,592	121,821

18.—Production and Domestic Disappearance of Poultry Meat, 1956, 1966 and 1967

(Eviscerated weight)

Year and Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
1956				
Fowl and chickens.....	308,912	329,742	308,203	19.2
Turkeys.....	89,968	112,216	96,441	6.0
Geese.....	2,702	2,803	2,678	0.2
Ducks.....	2,885	4,001	3,802	0.2
Totals, 1956	404,467	448,762	411,124	25.6
1966				
Fowl and chickens.....	568,541	596,450	571,292	28.5
Turkeys.....	213,127	238,118	206,760	10.3
Geese.....	3,645	3,807	3,527	0.18
Ducks.....	5,131	7,274	6,726	0.34
Totals, 1966	790,444	845,649	788,305	39.3
1967				
Fowl and chickens.....	601,331	636,023	612,609	30.0
Turkeys.....	207,639	244,077	213,224	10.4
Geese.....	3,740	3,978	3,815	0.19
Ducks.....	4,953	7,012	6,522	0.32
Totals, 1967	817,663	891,090	836,170	40.9

Subsection 5.—Dairying

The total number of dairy cattle has been declining gradually for many years but increased output per cow has kept total milk production at a fairly static level during the past few years. Milk production is concentrated in Central Canada, the provinces of Ontario and Quebec accounting for about 73 p.c. of the total quantity. Of the total output in 1967, 63 p.c. was used for factory-made dairy products, 29 p.c. was sold in fluid form and 8 p.c. was used for all purposes on farms.

19.—Production and Utilization of Milk, by Province, 1965-67

Province and Year	Milk Used in Manufacture		Milk Otherwise Used			Total Milk Production
	On Farms ¹	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1965	889	181,715	21,817	19,750	9,581	233,752
1966 ^r	725	175,938	21,606	19,630	7,126	225,025
1967	749	170,335	21,312	19,410	6,775	218,581
Nova Scotia.....1965	3,229	108,611	197,929	25,080	11,437	346,286
1966 ^r	2,878	111,159	198,696	23,010	10,151	345,894
1967	2,808	105,963	203,178	22,710	10,689	345,348
New Brunswick.....1965	4,282	156,108	157,298	23,240	9,091	350,019
1966 ^r	3,978	140,264	158,649	22,360	8,000	333,251
1967	3,885	128,981	158,272	22,050	7,218	320,406
Quebec.....1965	7,699	4,175,390	1,454,647	214,900	212,040	6,064,676
1966 ^r	7,301	4,553,671	1,464,165	203,500	187,900	6,416,537
1967	6,950	4,753,560	1,472,583	206,500	189,350	6,628,943
Ontario.....1965	8,120	4,403,668	2,074,504	192,200	292,600	6,971,092
1966 ^r	6,949	4,237,649	2,096,987	189,500	270,400	6,801,485
1967	6,950	4,100,124	2,101,175	186,000	264,900	6,659,149
Manitoba.....1965	9,102	557,644	249,521	85,500	52,820	954,587
1966 ^r	7,184	497,157	247,558	84,340	49,150	885,389
1967	6,669	468,383	246,720	82,040	48,790	852,602
Saskatchewan.....1965	24,617	516,761	195,457	152,400	64,360	953,595
1966	20,639	456,089	196,941	150,800	56,100	880,569
1967	20,311	392,457	200,348	151,900	51,370	816,386
Alberta.....1965	26,653	1,015,921	361,377	142,900	94,370	1,641,221
1966 ^r	24,968	998,031	359,322	134,850	94,540	1,611,711
1967	22,885	960,761	354,699	134,260	96,350	1,568,955
British Columbia.....1965	2,948	296,997	493,001	23,330	28,450	844,726
1966 ^r	2,855	318,664	510,717	21,910	25,920	880,066
1967	2,831	318,101	525,642	22,290	24,760	893,624
Totals.....1965	87,539	11,412,815	5,205,551	879,300	774,749	18,359,954
1966 ^r	77,477	11,488,622	5,254,641	849,900	709,287	18,379,927
1967	74,038	11,398,665	5,283,929	847,160	700,202	18,303,994

¹ Used in farm butter only.

20.—Farm Values of Milk Production, by Province, 1965-67

Province and Year	Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
	On Farms ¹	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms ²	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1965	21	4,539	911	583	884	6,938
1966 ^r	18	4,368	965	559	767	6,677
1967	20	4,409	1,022	586	797	6,834
Nova Scotia.....1965	77	2,650	9,934	772	621	14,054
1966 ^r	70	2,743	10,666	683	543	14,705
1967	70	2,808	11,365	674	525	15,442
New Brunswick.....1965	110	3,789	7,625	723	828	13,075
1966 ^r	102	3,266	8,101	686	806	12,961
1967	103	3,095	8,487	686	711	13,082
Quebec.....1965	184	124,795	65,203	7,027	15,269	212,478
1966 ^r	187	134,583	69,997	5,942	9,699	220,408
1967	190	150,383	77,809	6,298	10,854	245,534
Ontario.....1965	198	122,749	96,466	5,535	16,667	241,615
1966 ^r	175	121,792	105,284	5,306	12,489	245,046
1967	181	127,196	114,809	5,338	12,279	259,803
Manitoba.....1965	226	12,610	10,643	2,300	3,692	29,471
1966 ^r	184	10,930	11,115	2,142	3,199	27,570
1967	177	10,946	12,096	2,141	2,995	28,355
Saskatchewan.....1965	589	11,704	9,192	4,100	3,863	29,448
1966 ^r	512	9,754	9,797	3,936	3,537	27,536
1967	521	8,523	10,480	3,934	2,934	26,392
Alberta.....1965	638	24,272	16,040	3,944	6,276	51,170
1966 ^r	608	23,223	16,773	3,574	5,887	50,065
1967	577	23,690	18,329	3,706	5,924	52,226
British Columbia.....1965	67	8,374	27,981	749	1,121	38,292
1966 ^r	66	9,801	31,160	798	1,025	42,850
1967	68	10,403	33,482	883	1,072	45,908
Totals.....1965	2,110	315,482	243,995	25,733	49,221	636,511
1966 ^r	1,922	320,460	263,853	23,626	37,952	647,818
1967	1,907	341,453	287,879	24,246	38,091	693,576

¹ Used in farm butter only.² Includes values of skim milk and buttermilk retained on farms.

21.—Production of Butter and Cheese, by Province, 1965-67

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory ¹
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..
Prince Edward Island.....1965	5,884	38	49	5,971	1,714
1966 ^r	5,189	31	50	5,270	1,974
1967	4,602	32	64	4,668	2,448
Nova Scotia.....1965	3,000	138	—	3,138	—
1966 ^r	2,877	123	—	3,000	565
1967	2,505	120	—	2,625	1,242
New Brunswick.....1965	5,719	183	—	5,902	610
1966 ^r	4,913	170	—	5,083	615
1967	4,431	166	—	4,597	580

For footnotes, see end of table.

21.—Production of Butter and Cheese, by Province, 1965-67—concluded

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory ¹
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Quebec.....	1965 131,611	329	1,920	133,860	69,346
	1966 141,199	312	1,994	143,505	79,550
	1967 149,167	297	2,050	151,514	75,353
Ontario.....	1965 107,922	347	2,689	110,958	102,655
	1966 103,123	297	2,934	106,354	106,434
	1967 97,994	297	3,230	101,521	104,424
Manitoba.....	1965 21,806	389	—	22,195	1,145
	1966 18,868	307	—	19,175	1,441
	1967 17,071	285	—	17,356	2,149
Saskatchewan.....	1965 21,700	1,052	—	22,752	—
	1966 19,031	832	—	19,913	—
	1967 16,256	868	—	17,124	—
Alberta.....	1965 36,562	1,139	4	37,705	2,291
	1966 34,543	1,067	5	35,615	2,442
	1967 33,396	978	3	34,377	3,249
British Columbia.....	1965 3,177	126	—	3,303	1,094
	1966 4,163	122	—	4,285	1,440
	1967 4,233	121	—	4,354	1,383
Totals.....	1965 337,351	3,741	4,662	345,784	179,136²
	1966 333,906	3,311	4,983	342,200	194,770²
	1967 329,655	3,164	5,347	338,166	191,162²

¹ Factory-made cheese includes cheddar and other cheese made from whole milk and cream.

² Amounts for "other cheese" are included in Quebec, Ontario and Alberta figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

In 1967 the output of butter continued the declining trend in evidence for a number of years. Creamery butter production has decreased nearly 9 p.c. since 1962 and farm-made butter has shown a much more significant change, dropping 57 p.c. in the same period. The 1967 output of creamery butter, which amounted to 330,000,000 lb., accounted for 7,714,000,000 lb. of milk or 42.2 p.c. of the national milk output and 68.0 p.c. of the milk used in dairy factory products. The production of farm butter accounted for only 74,000,000 lb. of milk or 0.4 p.c. of the national output. Per capita consumption of creamery butter was 16.43 lb. in 1967 compared with 17.35 lb. in 1966 and 18.17 lb. in 1965.

Cheese output, on the other hand, has moved gradually upward over the past 12 years, particularly in Ontario and Quebec; these two provinces accounted for 94.2 p.c. of the total output in 1967. The total Canadian production in that year amounted to about 191,000,000 lb., which represented approximately 2,098,000,000 lb. of milk or 11.5 p.c. of the total milk production. Exports of all cheese, mostly cheddar, amounted to 27,683,000 lb. in 1967 compared with 35,949,000 lb. in 1966.

Concentrated milk products, which comprise a large group of both whole milk and skim milk products, are moving in opposite utilization trends. The amount of milk going into whole milk products—evaporated milk, dry whole milk, partly skimmed concentrated products, etc.—is decreasing; milk used for these products amounted to 818,000,000 lb. in 1967, about 51,000,000 lb. fewer than in 1966 and 215,000,000 lb. fewer than in 1961. On the other hand, there is a steadily expanding market for solids non-fat, in the form of dry skim milk and casein; in 1967 the quantity of skim milk used in the production of these products amounted to 4,114,000,000 lb., an increase of 6.1 p.c. over the amount used in 1966. Casein production is concentrated in Quebec, about 96 p.c. of the national total originating in that province.

The importance of international trade in this sector of the industry is evident from the fact that of every 10 lb. of whole milk powder produced in Canada, six are exported; of every 10 lb. of casein produced, five are sold abroad; and of every 10 lb. of skim milk powder produced, three are exported. In normal years, export values of dairy products are three times as large as import values.

22.—Production of Concentrated Milk Products, 1963-67

(Exclusive of Newfoundland)

Product	1963	1964	1965 ^r	1966 ^r	1967
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Concentrated Whole Milk Products	383,675	384,942	377,275	363,018	338,687
Condensed milk.....	17,475	17,621	19,251	22,788	23,835
Evaporated milk.....	313,086	314,705	310,136	309,696	288,107
Whole milk powder.....	21,907	22,330	21,947	7,732	8,352
Partly skimmed evaporated milk.....	18,108	18,250	15,136	14,153	11,778
Other whole milk products ¹	13,099	12,036	10,805	8,649	6,615
Concentrated Milk By-products	259,759	292,547	328,892	373,546	421,191
Condensed skim milk.....	1,346	1,060	1,232	2,054	1,306
Evaporated skim milk.....	7,073	7,382	7,494	8,455	10,662
Skim milk powder.....	176,086	203,047	222,155	263,508	316,378
Powdered buttermilk.....	10,149	9,740	9,141	9,123	10,503
Whey powder.....	30,051	32,971	41,884	42,485	40,096
Casein.....	21,426	20,150	23,153	24,440	15,854
Other milk by-products ²	13,628	18,197	23,833	23,481	26,392
Totals	643,434	677,489	706,167	736,564	759,878

¹ Includes malted milk, cream powder, formula milks, whole milk powder of less than 26-p.c. fat, evaporated milk of 2-p.c. fat and concentrated liquid milk manufactured by fewer than three firms. ² Includes sugar of milk (lactose), condensed buttermilk, concentrated liquid skim milk lactalbumin and special formula skim milk products manufactured by fewer than three firms.

23.—Production of Ice Cream Mix, by Province, 1965-67

Province	1965	1966 ^r	1967	Province	1965	1966 ^r	1967
	'000 gal.	'000 gal.	'000 gal.		'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	..	..	..	Manitoba.....	1,505	1,492	1,613
Prince Edward Island..	165	172	186	Saskatchewan.....	1,188	1,174	1,333
Nova Scotia.....	1,140	1,166	1,182	Alberta.....	2,595	2,735	2,822
New Brunswick.....	722	793	814	British Columbia.....	2,908	2,946	3,145
Quebec.....	6,684	6,895	7,692				
Ontario.....	8,750	9,276	9,347	Totals	25,657	26,649	28,134

As indicated in Table 24, the estimated total consumption of fluid milk and cream, on a milk basis, has increased only slightly over the past three years and the per capita consumption has continued the slow decline in evidence over the past two decades. Total and per capita domestic disappearance of all dairy products are shown in Table 25.

24.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1965-67

Province and Year	Estimated Con- sumption	Daily per Capita Con- sumption	Province and Year	Estimated Con- sumption	Daily per Capita Con- sumption
	'000 pt.	pt.		'000 pt.	pt.
Newfoundland.....	..	..	Manitoba.....1965	259,706	0.74
Prince Edward Island.....1965	32,222	0.81	1966	257,285	0.73
1966	31,966	0.80	1967	254,853	0.72
1967	31,568	0.79	Saskatchewan.....1965	269,656	0.78
Nova Scotia.....1965	172,875	0.63	1966	269,566	0.77
1966	171,865	0.62	1967	273,061	0.78
1967	175,107	0.63	Alberta.....1965	390,912	0.74
New Brunswick.....1965	139,951	0.62	1966	383,079	0.72
1966	140,317	0.62	1967	379,039	0.70
1967	139,785	0.62	British Columbia.....1965	400,256	0.61
Quebec.....1965	1,294,222	0.63	1966	412,888	0.60
1966	1,292,762	0.61	1967	424,754	0.60
1967	1,301,616	0.61	Totals.....1965	4,716,933	0.67
Ontario.....1965	1,757,133	0.71	1966	4,732,197	0.66
1966	1,772,469	0.70	1967	4,752,787	0.65
1967	1,773,004	0.68			

25.—Domestic Disappearance of Dairy Products, 1965-67

Product	1965		1966*		1967	
	Total	Per Capita ¹	Total	Per Capita ¹	Total	Per Capita ¹
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Milk and Cream.....	6,084,851	318.48	6,104,541	312.16	6,131,089	307.48
Milk.....	5,162,722	270.22	5,194,598	265.63	5,222,399	261.91
Cream as milk.....	922,129	48.26	909,943	46.53	908,690	45.57
Butter.....	364,515	18.52	356,110	17.76	344,446	16.85
Creamery.....	356,201	18.10	347,819	17.35	335,839	16.43
Dairy.....	3,741	0.19	3,311	0.16	3,164	0.15
Whey.....	4,573	0.23	4,980	0.25	5,443	0.27
Cheese.....	179,011	9.10	184,144	9.18	202,357	9.90
Cheddar.....	67,169	3.41	58,785	2.93	68,511	3.35
Process.....	75,238	3.83	84,450	4.21	84,727	4.15
Other.....	36,604	1.86	40,909	2.04	49,119	2.40
Concentrated Whole Milk Products ²	349,215	17.75	346,720	17.29	337,537	16.51
Evaporated.....	299,633	15.23	299,970	14.96	289,825	14.18
Condensed.....	19,138	0.97	22,352	1.11	24,325	1.19
Powdered.....	3,840	0.19	1,298	0.07	4,684	0.23
Concentrated Milk By-products ³	226,790	11.53	256,548	12.80	234,967	11.49
Evaporated.....	7,553	0.38	8,428	0.42	10,575	0.52
Condensed.....	1,233	0.06	2,052	0.10	1,279	0.06
Powdered.....	138,892	7.06	163,640	8.16	139,899	6.84
All Dairy Products In Terms of Milk—						
Butter.....	8,422,642	428.02	8,216,442	409.80	7,932,671	388.08
Cheese.....	1,743,551	88.60	1,771,033	88.33	1,970,677	96.41
Concentrated.....	817,602	41.55	795,876	39.69	794,539	38.87
Grand Totals ⁴	17,605,838	902.55	17,524,396	881.73	17,565,098	866.85

¹ Includes Newfoundland for all manufactured dairy products.² Includes, in addition to the items listed, salted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26-p.c. fat, formula milks, evaporated milk of 2-p.c. fat, and concentrated liquid milk.³ Includes milk by-product items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products, lactalbumin and concentrated liquid skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.⁴ Includes ice cream in terms of milk.

Subsection 6.—Fruits, Vegetables and Other Farm Products

Fruits.—Commercial fruit growing in Canada is confined almost exclusively to rather limited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. In Quebec the fruit growing districts are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree-fruit culture. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are largely limited to Ontario and British Columbia.

By far the most valuable fruit crop produced in Canada is apples and in 1966 the farm value for this crop was \$31,700,000. The main outlet for Canadian apples is the fresh market which absorbs about 65 p.c. of the production each year. The volume of apples for processing has increased from year to year and now accounts for about 35 p.c. of production. In Nova Scotia nearly 70 p.c. of the crop is processed; lesser quantities are processed in other producing provinces.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island, but are produced over a somewhat wider area than are tree fruits. Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area. Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain areas in these provinces and a large percentage of the crop is frozen and exported. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported. Canning and processing industries have developed in the fruit growing districts and, although the importance of the processing market varies with different fruits, it provides a valuable outlet for substantial proportions of most Canadian-grown fruit crops.

26.—Value of Commercial Fruit Produced, by Province, 1965-67, with Average for 1960-64

(Farm value for unpacked fruit)

Province	Average 1960-64	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	708	634	567	325
Prince Edward Island.....	1,881	392	317	455
Nova Scotia.....	18,651	5,352	5,077	5,157
New Brunswick.....	6,959	1,573	2,121	1,850
Quebec.....	44,440	9,351	12,013	9,121
Ontario.....	130,175	28,421	30,705	33,041
British Columbia.....	104,922	18,379	26,076	31,364
Totals.....	307,736	64,102	76,876	81,313

Tables 26 and 27 show the estimated commercial production of fruit, by province for 1960-67 and by kind for 1965-67.

27.—Estimated Commercial Production and Farm Value of Fruit, 1965-67

Kind of Fruit and Year	Quantity	Weight	Farm Value	Kind of Fruit and Year	Quantity	Weight	Farm Value
	'000 bu.	'000 lb.	\$'000		'000 bu.	'000 lb.	\$'000
Apples—				Peaches—			
1965.....	22,316	1,004,220	30,999	1965.....	1,606	80,300	5,531
1966.....	21,042	946,890	31,717	1966.....	2,085	104,250	7,434
1967.....	21,838	982,710	36,557	1967.....	1,646	82,300	7,207
Apricots—				Pears—			
1965.....	2	100	13	1965.....	1,065	53,250	2,661
1966.....	279	13,950	536	1966.....	2,062	103,100	4,240
1967.....	132	6,600	343	1967.....	1,752	87,600	4,814
Cherries (sour)—				Plums and Prunes—			
1965.....	444	22,200	1,621	1965.....	505	25,250	1,209
1966.....	264	13,200	1,647	1966.....	591	29,550	1,491
1967.....	455	22,750	3,300	1967.....	471	23,550	1,365
Cherries (sweet)—				Raspberries—	'000 qt.		
1965.....	242	12,100	2,018	1965.....	13,485	19,394	4,390
1966.....	413	20,650	3,649	1966.....	13,615	19,850	3,823
1967.....	532	26,600	4,193	1967.....	13,980	20,344	3,475
Strawberries—	'000 qt.			Grapes—	'000 lb.		
1965.....	17,282	22,304	5,405	1965.....	126,046	126,046	5,440
1966.....	30,695	41,182	8,809	1966.....	122,536	122,536	6,333
1967.....	32,909	43,880	8,780	1967.....	138,178	138,178	7,196
Loganberries—	'000 lb.			Blueberries—			
1965.....	991	991	168	1965.....	18,145	18,145	4,406
1966.....	1,340	1,340	236	1966.....	37,509	37,508	6,674
1967.....	1,609	1,609	265	1967.....	31,133	31,133	3,428

Vegetables.—Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland and Saskatchewan. Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces and a somewhat smaller range in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers for processing and for sale on the fresh market but do not include averages or production of vegetables grown for home use on farms and elsewhere.

28.—Estimated Commercial Acreage of Vegetables, by Province, 1965-67, with Average for 1960-64

Province	Av. 1960-64	1965	1966	1967
	acres	acres	acres	acres
Prince Edward Island.....		270	220	200
Nova Scotia.....	3,804	4,370	4,600	4,930
New Brunswick.....	7,312	9,620	8,680	10,250
Quebec.....	72,684	83,240	76,590	85,230
Ontario.....	103,965	117,220	113,450	121,150
Manitoba ¹	3,662	4,020	2,810	3,240
Alberta ¹	15,736	15,220	14,410	12,780
British Columbia.....	15,548	17,380	15,340	16,550
Totals	222,712	251,340	236,100	254,330

¹ Acreages of beans, corn and peas in Manitoba are included with Alberta.

**29.—Estimated Commercial Acreage and Production of Vegetables, 1965-67,
with Average for 1960-64**

Vegetable	Av. 1960-64		1965		1966		1967	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
Asparagus.....	3,928	6,693	3,820	5,866	3,821	5,492	3,466	5,081
Beans.....	19,164	67,514	26,360	97,831	24,775	106,209	27,151	111,421
Beets ¹	2,824	51,909	2,730	45,044	2,472	46,443	2,562	41,329
Cabbage ¹	6,930	131,032	7,350	143,365	6,690	137,281	6,680	135,159
Carrots ¹	12,782	319,113	15,450	300,637	14,079	420,918	13,789	355,060
Cauliflower ¹	2,934	32,362	3,320	37,490	2,977	32,658	3,343	37,281
Celery.....	1,198	42,571	1,050	42,832	974	38,790	1,103	36,618
Corn ¹	54,566	362,849	57,930	403,911	57,439	456,466	57,757	439,315
Cucumbers.....	9,244	70,225	11,850	65,413	11,241	104,018	12,489	120,194
Lettuce ¹	5,032	59,552	5,150	57,521	4,555	48,219	4,859	56,462
Onions.....	8,796	205,678	10,300	288,966	8,917	206,156	9,422	224,627
Parsnips ¹	690	12,293	690	13,863	602	11,082	443	8,064
Peas.....	52,054	114,660	58,690	168,259	50,600	125,760	52,650	135,880
Spinach.....	1,124	11,722	1,070	11,457	1,111	11,164	882	6,544
Tomatoes ¹	34,090	797,634	35,210	899,296	29,762	701,285	32,996	818,596
Turnips.....	9,714	235,258	10,370	243,016	9,087	214,616	8,749	240,468

¹ Prince Edward Island figures not included before 1965.

Tobacco.—Canada produces several types of leaf tobacco but by far the most important is the flue-cured or Bright Virginia type. This is grown mainly in Ontario, along with considerable quantities of burley and smaller amounts of dark (air-cured and fire-cured) tobacco. Quebec produces smaller quantities of these types as well as some cigar and pipe tobacco and small flue-cured acreages are also harvested in Prince Edward Island, Nova Scotia and New Brunswick. Although acreages planted were higher in 1967 than in 1966, yields per acre in all producing areas were smaller, resulting in a decrease in production from 234,182,000 lb. to 213,096,000 lb. The average value per pound also decreased from 70.04 cents to 68.03 cents.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past four decades. In 1922, the first year for which comparable figures are available, Canadian annual per capita production for domestic consumption of cigarettes (calculated on the basis of total population) was 229; in 1966 it was 2,312 and in 1967 2,297.

**30.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco,
by Province, 1962-67**

Year	Quebec			Ontario			Other Provinces		
	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value
	acres	'000 lb.	\$'000	acres	'000 lb.	\$'000	acres	'000 lb.	\$'000
1962.....	8,901	12,388	4,582	121,640	190,265	91,165	515	374	157
1963.....	8,933	10,776	4,046	104,178	189,719	86,279	782	649	308
1964.....	8,334	9,019	4,299	76,267	142,738	78,390	715	757	429
1965.....	9,348	9,272	3,961	89,220	158,810	101,765	776	798	472
1966 ¹	8,714	12,288	6,927	120,561	220,736	156,318	923	1,158	784
1967.....	8,871	10,601	6,018	130,871	201,074	137,983	1,031	1,421	972

**21.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco,
by Main Type, 1965-67**

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Value	
	acres	lb.	'000 lb.	cts.	\$'000	
Flue-cured.....	1965	93,523	1,702	159,185	64.6	102,816
	1966 ¹	124,136	1,803	223,756	71.3	159,629
	1967	135,363	1,509	204,267	69.1	141,112
Burley.....	1965	1,939	2,054	3,982	44.7	1,780
	1966 ¹	2,796	3,216	5,492	51.7	2,837
	1967	2,422	1,936	4,690	51.4	2,411
Cigar leaf.....	1965	3,108	1,461	4,540	25.3	1,147
	1966 ¹	2,519	1,561	3,934	28.8	1,134
	1967	2,141	1,465	3,140	32.5	1,021
Totals¹.....	1965	99,344	1,700	168,880	62.9	106,198
	1966¹	130,198	1,799	234,182	70.0	164,029
	1967	140,773	1,514	213,096	68.0	144,973

¹ Includes other types not specified.

Eggs.—Egg production in 1967 at 442,176,000 doz. was 6.1 p.c. higher than the output of 1966 and 1.3 p.c. lower than the record production in 1959, which amounted to 448,200,000 doz. The number of layers increased slightly and the rate of lay per 100 layers increased to 20,293 from 19,742. The farm selling price of eggs averaged 35.3 cents per doz. compared with 42.8 cents in 1966 so that, despite the higher production, there was a decrease in total value of eggs produced. The three Maritime Provinces produced 6.8 p.c. of all eggs in 1967; Quebec, 17.9 p.c.; Ontario, 38.3 p.c.; the Prairies, 24.6 p.c.; and British Columbia 12.4 p.c.

32.—Production, Utilization and Value of Farm Eggs, by Province, 1966 and 1967

Province	1966 ¹				1967			
	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid ¹	Total Value (Sold and Used)	Average Number of Layers	Average Production per 100 Layers	Net Eggs Laid ¹	Total Value (Sold and Used)
	'000	No.	'000 doz.	\$'000	'000	No.	'000 doz.	\$'000
Prince Edward Island.....	210	18,384	3,176	1,333	201	18,356	3,055	1,139
Nova Scotia.....	1,111	21,689	19,854	9,180	1,039	21,635	18,757	7,669
New Brunswick.....	539	19,725	8,745	4,469	505	19,804	8,338	3,787
Quebec.....	4,667	19,358	74,497	36,028	4,856	19,523	78,962	31,387
Ontario.....	9,387	20,338	158,156	70,824	9,833	20,689	169,324	61,496
Manitoba.....	2,615	19,784	42,836	15,850	2,837	20,597	48,645	13,961
Saskatchewan.....	1,534	17,637	22,330	7,770	1,424	17,638	20,972	6,689
Alberta.....	2,499	18,825	38,715	13,630	2,500	18,883	39,309	12,400
British Columbia.....	2,800	20,925	48,494	19,343	3,077	21,374	54,814	17,374
Totals.....	25,361	19,742	416,803	178,427	26,273	20,293	442,176	155,902

¹ Total laid less loss.

Wool.—Table 33 gives the estimated production and apparent consumption of wool in Canada for the years 1963 to 1967. However, it should be noted that the estimates for 1967 are not strictly comparable with those of previous years because they exclude the output of pulled wool which is now produced by fewer than three firms and, according to the provisions of the Statistics Act, cannot be shown. In any case, it is evident that Canada produces only between 7 p.c. and 8 p.c. of its total wool requirements.

33.—Production and Apparent Consumption of Wool, 1963-67

Item	1963	1964	1965	1966	1967
Shorn Wool Produced—					
Yield per fleece..... lb.	7.9	8.0	7.8	7.7	7.6
Total yield..... '000 lb.	5,259	5,065	4,653	4,178	3,758
Price per pound ¹ cts.	51.9	51.5	48.9	48.6	49.4
Total value..... \$'000	2,728	2,611	2,273	2,032	1,856
Pulled Wool Produced..... '000 lb.	1,553	1,281	1,162	867	²
Totals, Wool Production..... '000 lb.	6,812	6,346	5,815	5,045	3,758
Apparent wool consumption ² '000 lb.	61,956	64,977	66,801	63,941	55,586

¹ Includes Agricultural Stabilization Act payments of 14.3 cents per lb. in 1963, 12.3 cents per lb. in 1964, 16.3 cents per lb. in 1965, 18.3 cents per lb. in 1966 and 27.9 cents per lb. on the 1967 clip for qualifying grades of wool. ² See text above.

Honey.—As shown in Table 34, honey production in 1967 was 3 p.c. above that in 1966, accounted for by an increase in colony numbers. Average production per colony was 103 lb. compared with 104 lb. in 1966.

Honey is produced commercially in all provinces except Newfoundland and yields vary considerably from year to year. In 1967 Alberta was the largest producer, surpassing Ontario, the next largest producer, by 11,000,000 lb. Honey bees are kept in some fruit growing districts for pollination purposes and are also used for pollination of certain seed crops.

To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1967, Canada exported 4,325,259 lb. of honey valued at \$1,059,000, mainly to Britain, Japan, West Germany, the United States, Belgium and Luxembourg.

34.—Honey and Beeswax Production 1965-67, with Average for 1960-64

Item	Av. 1960-64	1965	1966	1967
Honey—				
Total production..... '000 lb.	35,360	49,157	44,502	45,682
Average production per colony..... lb.	101	119	104	103
Total value..... \$'000	6,068	8,767	8,119	7,739
Beeswax—				
Production..... '000 lb.	524	733	661	679
Value..... \$'000	238	340	311	355
Total Value, Honey and Beeswax..... \$'000	6,306	9,107	8,430	8,094
Beekeepers..... No.	11,204	10,350	10,000	9,660
Bee colonies..... "	349,404	413,030	429,860	445,070

35.—Honey Production, by Province, 1965-67, with Average for 1960-64

Province	Av. 1960-64	1965	1966	1967
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Prince Edward Island.....	55	56	50	33
Nova Scotia.....	191	303	208	236
New Brunswick.....	92	86	102	108
Quebec.....	3,022	2,392	3,266	3,063
Ontario.....	10,462	9,800	10,216	6,032
Manitoba.....	6,153	5,930	8,910	9,140
Saskatchewan.....	4,591	6,300	6,100	7,150
Alberta.....	9,089	20,050	13,180	17,380
British Columbia.....	1,705	4,240	2,470	2,540
Totals.....	35,360	49,157	44,502	45,682

Sugar Beets and Beet Sugar.—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined to the southwestern section of the province. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.

36.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Beet Sugar Shipments, 1963-67

Year	Sugar Beets					Beet Sugar (All Types)	
	Har- vested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Farm Value	Shipments	Value
	acres	tons	tons	\$	\$'000	'000 lb.	\$'000
1963.....	95,223	13.50	1,285,747	18.34	23,586	290,288	33,198
1964.....	101,312	12.81	1,297,912	14.71	19,091	307,652	37,033
1965.....	85,023	13.44	1,142,341	16.69	19,061	327,288	23,626
1966.....	81,272	14.35	1,166,554	16.40	19,126	276,213	19,298
1967.....	83,305	12.98	1,081,082	12.59	13,613	303,076	21,172

Maple Sugar and Maple Syrup.—Maple syrup is produced commercially in the provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous both in Canada and in the United States as the centre of the maple products industry. Virtually all of the maple products exported go to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.

37.—Production of Maple Sugar and Maple Syrup, by Province, 1965-67, with Average for 1960-64

Province and Year	Maple Sugar		Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Value	Quantity	Average Price per gal.	Value	
	lb.	\$	gal.	\$	\$	\$
Nova Scotia—						
Av. 1960-64.....	10,000	6,000	3,000	5.67	17,000	23,000
1965.....	8,380	6,000	3,240	6.17	20,000	26,000
1966.....	12,700	10,000	5,280	6.82	36,000	46,000
1967.....	8,010	7,000	4,930	7.30	36,000	43,000
New Brunswick—						
Av. 1960-64.....	34,000	22,000	8,000	5.62	45,000	67,000
1965.....	40,180	32,000	12,000	6.33	76,000	108,000
1966.....	31,000	25,000	10,600	6.13	65,000	90,000
1967.....	30,320	27,000	8,160	6.62	54,000	81,000
Quebec—						
Av. 1960-64.....	576,000	291,000	2,191,000	3.85	8,446,000	8,737,000
1965.....	436,000	244,000	1,957,000	4.15	8,122,000	8,366,000
1966.....	434,000	252,000	2,802,000	4.29	12,021,000	12,273,000
1967.....	381,000	240,000	2,183,000	4.20	9,169,000	9,409,000
Ontario—						
Av. 1960-64.....	14,000	9,000	251,000	5.15	1,293,000	1,303,000
1965.....	9,920	8,000	187,000	5.60	1,047,000	1,055,000
1966.....	18,325	16,000	311,500	5.88	1,832,000	1,848,000
1967.....	14,096	14,000	224,130	6.09	1,365,000	1,379,000
Totals—						
Av. 1960-64.....	634,000	329,000	2,453,000	4.00	9,801,000	10,130,000
1965.....	494,480	290,000	2,159,240	4.29	9,265,000	9,555,000
1966.....	496,025	303,000	3,129,350	4.46	13,954,000	14,257,000
1967.....	433,426	288,000	2,420,220	4.39	10,624,000	10,912,000

Nursery Stock.—Statistics concerning the nursery industry in Canada for recent years are presented in Tables 38 and 39. All nurseries were asked to report quantities sold of stock propagated during these years; stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 264 nurseries reported shipments in 1967. Wholesale value of nursery stock shipments of fruit trees, etc., amounted to \$974,362 compared with \$736,222 in the previous year, and shipments of ornamental species to \$6,963,290 compared with \$5,350,711.

38.—Nursery Stock Shipments (Domestic), by Type, 1963-67

Classification	1963	1964	1965	1966	1967
	No.	No.	No.	No.	No.
Fruit Trees, etc.—					
Apple species.....	259,736	303,627	278,385	335,483	364,554
Tender tree-fruit species.....	304,880	242,545	296,187	259,631	310,659
Small fruit species.....	4,801,390	5,188,499	4,371,394	4,948,028	4,832,623
Other species.....	239,237	218,030	233,821	287,418	211,556
Ornamental Species—					
Rose bushes and hybrid teas.....	1,592,073	1,424,544	1,845,273	1,564,294	2,050,500
Other ornamental shrubs and deciduous trees.....	3,998,417	8,401,969	3,920,113	4,254,477	4,212,618
Evergreen trees.....	1,488,811	1,527,724	1,235,038	1,201,900	1,723,560
Ornamental climbers.....	60,289	69,571	71,745	95,642	157,863
Perennials.....	..	..	1,060,257	1,314,606	1,411,771

39.—Acreage of Nursery Stock, by Province, 1966 and 1967

Province	1966		1967	
	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species
	acres	acres	acres	acres
Quebec ¹	78	299	77	504
Ontario.....	510	2,012	365	3,114
Prairie Provinces.....	120	656	63	735
British Columbia.....	129	141	124	282
Totals	837	3,108	628	4,634

¹ Includes the Maritime Provinces for which insufficient information was reported.

Greenhouse Operations.—Annual surveys are made of greenhouse operations. Resulting figures are based on data reported by firms and individuals returning questionnaires, with the exception of that for cucumbers and tomatoes grown in Essex County of Ontario (the most important producing area), which are based on information obtained from the local co-operative marketing agency. Only greenhouses used for the production of items for sale are included in the survey.

40.—Greenhouse Operations, by Province, 1966, with Totals for 1963-66

Province	Firms Reporting	Area				Value of Sales (Wholesale)			
		Under Glass	Under Cloth	Under Plastic	Open Field	Cut Flowers and Potted Plants	Vegetables	Plants—Rooted Cuttings, etc., for Growing On	Total Sales
	No.	sq. ft.	sq. ft.	sq. ft.	acres	\$	\$	\$	\$
Nfld.....	14	19,988	500	22,898	10.2	69,854	1,395	38,839	110,088
P.E.I.....	40	672,344	2,450	395,450	11.8	1,148,642	362,727	36,969	1,548,338
N.S.....	29	241,296	3,216	53,066	17.8	422,504	20,600	46,462	489,566
N.B.....	101	1,196,475	10,920	178,384	72.9	1,732,026	38,031	304,191	2,074,248
Que.....	461	15,496,061	483,872	3,150,806	329.8	10,717,742	7,036,030	5,282,971	23,036,743
Ont.....	37	168,248	4,800	107,820	24.2	353,090	560	104,969	458,619
Man.....	15	123,150	—	95,000	27.5	184,339	11,977	101,177	297,493
Sask.....	49	1,297,957	27,530	141,510	40.3	1,427,262	161,215	272,298	1,860,775
Alta.....	142	1,910,129	13,646	485,366	234.5	2,225,386	1,356,843	290,932	3,873,161
B.C.....	888	21,125,648	546,934	4,630,300	769.0	18,280,845	8,989,378	6,478,808	33,749,031
Totals, 1966	909	19,987,125	328,122	4,458,882	875.6	17,966,998	8,544,835	3,865,344	30,377,177
1965	1,126	21,026,279	468,261	..	816.1	19,569,140	7,715,312	4,224,313	31,508,765
1964	1,195	23,735,418	437,671	..	807.8	17,951,072	6,818,638	3,494,414	28,264,124

Subsection 7.—Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those prior to August 1967, the following points should be considered. Prices of all Western grains used in the construction of the index prior to that date are final prices; all later figures are initial prices only for wheat, oats and barley. Any subsequent participation payments will be added to the prices currently used and the index revised upward accordingly.

41.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1963-67, and Monthly Indexes for 1966 and 1967

(1935-39 = 100)

NOTE.—A description of this index, its coverage and the methods used will be found in DBS *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for October-December 1946. Monthly prices of grain and of live-stock are carried in the current issues of the same publication.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
Averages—										
1963.....	214.3	232.8	222.2	274.6	273.6	268.1	258.1	277.6	278.2	268.4
1964.....	255.1	232.5	245.0	280.5	269.5	261.5	253.5	271.3	273.0	265.8
1965.....	336.9	259.1	302.0	307.8	294.6	268.9	254.4	276.4	301.2	282.2
1966.....	279.4	266.8	265.7	345.7	328.0	291.1	274.1	302.9	313.3	307.0
1967.....	232.6	263.8	246.3	357.8	333.7	288.7	266.2	292.2	307.2	305.0
1966										
January.....	273.4	251.5	263.3	332.2	323.4	284.3	269.8	301.3	312.0	301.8
February.....	292.0	260.4	277.6	340.7	327.8	289.5	273.5	308.5	316.6	307.5
March.....	334.2	262.0	277.9	335.2	318.1	287.7	272.4	303.8	320.3	303.4
April.....	376.5	281.3	307.5	344.2	325.5	290.0	271.7	299.1	324.8	307.5
May.....	364.6	286.5	321.3	348.0	330.3	289.9	271.9	301.3	325.0	310.1
June.....	266.8	278.1	270.4	351.9	331.5	291.3	272.6	304.2	322.3	309.3
July.....	234.9	262.6	238.8	345.3	324.5	286.8	271.0	297.8	316.3	302.9
August.....	259.8	263.5	240.6	342.2	322.4	290.0	273.6	301.7	310.0	303.6
September.....	242.5	262.4	235.9	346.2	324.6	295.4	277.5	303.6	301.3	305.7
October.....	244.3	266.6	252.7	354.0	335.0	296.9	278.6	305.5	303.2	311.0
November.....	232.7	263.6	250.5	354.0	336.2	293.8	278.0	303.2	302.8	310.2
December.....	230.7	263.3	252.1	355.0	336.6	297.6	279.1	304.8	304.8	311.5
1967										
January.....	241.5	264.2	260.8	355.0	335.5	296.6	278.1	303.3	308.1	311.0
February.....	227.0	264.1	253.4	361.4	335.3	297.3	279.4	305.3	303.7	311.9
March.....	223.5	258.8	247.4	360.0	331.8	297.6	278.6	304.1	304.5	310.1
April.....	208.3	261.9	224.7	357.9	327.3	299.1	278.4	301.1	304.7	307.5
May.....	223.4	259.2	235.6	354.9	331.1	299.2	278.5	304.4	302.4	309.2
June.....	228.0	264.0	240.4	362.1	335.3	301.5	281.2	309.4	305.1	313.3
July.....	226.6	263.7	239.9	356.8	331.2	300.0	279.3	305.5	305.9	310.2
August.....	277.4	274.5	260.5	359.4	339.8	274.5	247.6	276.8	309.3	300.1
September.....	233.1	261.6	243.7	357.7	336.7	277.2	249.3	277.3	311.1	298.6
October.....	243.0	262.8	257.2	357.7	336.1	275.6	248.7	275.7	312.0	298.3
November.....	230.1	264.2	249.4	355.1	331.8	272.8	246.6	271.4	310.3	294.9
December.....	228.7	266.6	242.7	356.0	332.0	273.2	248.2	272.1	309.0	295.4

42.—Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31, 1958-67

(Basis, in store Fort William-Port Arthur)

Year Ended July 31—	Averages in Cents and Eighths per Bushel				
	Wheat, ^{1,2} No. 1 N.	Oats, ¹ No. 2 C.W.	Barley, ¹ No. 3 C.W. — 6 Row	Rye, ³ No. 2 C.W.	Flaxseed, ³ No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
1958.....	162/3	76/3	111	106	303
1959.....	166/2	77/6	109/7	108	302
1960.....	165/7	82/4	108/1	109/7	334/2
1961.....	167/4	81/2	107/5	105	311/4
1962.....	189/7	96/1	143/7	136/6	368/2
1963.....	196/1	81/6	130/6	137/2	335
1964.....	203/3	78/5	123/4	146/7	319/6
1965.....	198/3	83	133/2	125/4	320/3
1966.....	199/6	89/6	138/4	128/5	299/3
1967.....					

¹ Canadian Wheat Board daily fixed prices.² International Wheat Agreement and domestic sales.³ Winnipeg Grain Exchange daily closing cash quotations.

43.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1964-67

Item	Toronto				Montreal			
	1964	1965	1966	1967	1964	1965	1966	1967
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	22.70	24.00	25.85	27.65	22.40	23.85	25.45	27.65
Steers, medium.....	20.60	21.90	24.30	25.30	20.55	22.20	24.25	26.10
Steers, common.....	17.08	17.28	21.00	22.00	17.17	18.06	20.95	22.80
Heifers, good.....	20.53	21.05	24.45	25.60	20.25	20.85	22.90	23.75
Heifers, medium.....	18.61	18.96	22.40	23.60	18.50	18.67	21.10	21.75
Cows, good.....	16.00	15.50	19.80	20.65	16.60	15.80	19.90	21.00
Cows, medium.....	14.46	14.25	18.20	19.36	14.62	13.45	17.35	17.95
Bulls, good.....	18.29	16.50	20.05	21.95	18.71	15.92	20.65	21.70
Feeder steers, good.....	22.80	22.70	27.70	28.70	1	1	1	1
Feeder steers, common.....	18.44	18.63	23.20	23.75	1	1	26.50	1
Calves, veal, good and choice.....	29.85	30.50	34.95	36.15	27.75	28.80	35.40	37.00
Calves, veal, common and medium.....	22.46	19.89	24.10	25.83	20.82	21.17	26.10	28.35
Hogs, Grade B, dressed.....	26.30	32.40	34.90	29.70	25.80	30.75	33.50	28.40
Lambs, good.....	24.30	26.70	26.50	26.65	23.10	29.70	23.95	24.80
Lambs, common.....	20.29	21.64	23.25	22.65	17.05	18.41	21.90	22.20
Sheep, good.....	8.80	8.32	10.60	11.33	8.87	11.10	12.50	9.80

Item	Winnipeg				Edmonton			
	1964	1965	1966	1967	1964	1965	1966	1967
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, good.....	21.85	23.25	25.15	26.60	20.70	22.15	24.05	25.35
Steers, medium.....	19.92	21.05	23.15	24.80	19.14	20.28	22.65	24.20
Steers, common.....	17.52	17.75	19.40	22.60	16.76	16.68	20.50	22.35
Heifers, good.....	19.74	20.55	23.40	24.35	18.43	19.52	22.10	23.65
Heifers, medium.....	17.65	18.10	21.30	22.60	16.87	19.03	20.75	22.60
Cows, good.....	15.40	14.80	18.85	19.95	14.25	13.30	17.15	18.10
Cows, medium.....	14.33	13.67	17.70	18.35	13.02	11.99	15.95	16.85
Bulls, good.....	16.65	16.13	20.20	21.20	15.15	14.60	18.70	19.50
Feeder steers, good.....	20.85	22.05	25.55	26.55	20.40	21.40	24.70	26.40
Feeder steers, common.....	17.20	19.19	21.80	23.15	16.66	17.49	21.80	23.25
Feeder cows and heifers, good.....	16.52	18.08	21.35	22.45	16.40	15.74	19.80	22.40
Feeder cows and heifers, common.....	13.86	15.29	18.00	19.30	13.41	12.77	17.75	19.85
Calves, veal, good and choice.....	30.70	29.80	34.35	38.85	23.95	22.55	28.20	30.40
Calves, veal, common and medium.....	23.06	23.00	26.65	27.45	18.35	16.46	21.95	23.10
Hogs, Grade B, dressed.....	23.55	30.65	33.45	27.55	22.85	31.00	32.10	25.70
Lambs, good.....	19.80	21.30	21.85	21.45	18.10	20.70	22.00	19.95
Lambs, common.....	17.61	18.61	19.50	18.35	16.68	19.08	19.30	18.20
Sheep, good.....	4.64	4.55	5.00	5.45	5.80	7.04	5.90	7.50

1 No sales reported.

Subsection 8.—Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the hands of the consumer.

All basic foods are classified under 12 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (by weight) in the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 44 represents the official estimates of yearly supplies of food going into consumption, expressed in pounds per capita, for the years 1961-65 as an average for comparison with the years 1965 and 1966.

44.—Per Capita Supplies of Food Moving into Consumption 1965 and 1966, with Average for 1961-65

Kinds of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1961-65 Average	
	1961-65 Average	1965:	1966	1965:	1966
Cereals..... Retail wt.	153.7	163.9	143.1	106.6	93.1
Flour (including rye flour) ¹	135.5	142.6	131.1	105.2	96.8
Oatmeal and rolled oats.....	5.0	5.1	4.5	102.0	90.0
Pot and pearl barley.....	0.1	0.1	0.1	100.0	100.0
Corn meal and flour.....	2.2	3.0	3.2	136.4	145.5
Buckwheat flour.....	0.03	0.04	0.04	133.3	133.3
Rice.....	4.2	6.1	4.2	145.2	100.0
Breakfast food.....	6.8	7.0	..	102.9	..
Potatoes..... Fresh equiv.	158.8	156.4	153.8	98.5	96.9
White potatoes, fresh..... Retail wt.	135.4	124.5	115.0	91.9	84.9
Sweet potatoes, fresh.....	0.4	0.4	0.4	100.0	100.0
Sugars and Syrups..... Sugar content	106.1	108.4	112.4	102.2	105.9
Sugar..... Refined wt.	97.9	100.5	105.0	102.7	107.3
Maple sugar..... Retail wt.	0.7	0.4	0.8	57.1	114.3
Honey.....	1.8	1.8	1.4	100.0	77.8
Other.....	8.4	5.7	5.2	67.9	61.9
Pulses and Nuts..... Retail wt.	10.3	12.4	11.1	120.4	107.8
Dry beans ²	2.4	2.4	3.3	100.0	137.5
Dry peas.....	1.6	1.6	0.5	100.0	31.2
Peanuts.....	3.3	3.7	3.3	112.1	100.0
Tree nuts.....	1.1	1.2	1.2	109.1	109.1
Cocoa.....	3.1	3.5	2.8	112.9	90.3
Fruits..... Fresh equiv.	235.1	243.1	251.4	103.4	106.9
Tomatoes and Citrus Fruit—					
Tomatoes, fresh..... Retail wt.	14.8	12.4	20.6	83.8	139.2
Tomato products ³ Net wt. canned	21.1	20.9	20.4	99.1	96.7
Citrus fruit, fresh..... Retail wt.	25.0	25.0	24.9	100.0	99.6
Citrus fruit juice..... Net wt. canned	13.2	11.3	12.6	85.6	95.5
Other Fruit—					
Fresh..... Retail wt.	86.8	73.2	72.3	84.3	83.3
Canned..... Net wt. canned	20.1	18.5	17.8	92.0	88.6
Juice.....	8.2	9.4	11.2	114.6	136.6
Frozen..... Retail wt.	3.8	3.6	3.3	94.7	86.8
Unspecified..... Fresh equiv.	16.9	21.7	27.2	128.4	160.9
Vegetables..... Fresh equiv.	110.8	115.0	114.9	103.8	103.7
Fresh—					
Cabbage and greens..... Retail wt.	18.2	19.4	18.6	106.6	102.2
Carrots.....	14.7	14.1	17.4	95.9	118.4
Legumes.....	1.9	1.8	0.6	94.7	31.6
Other.....	37.4	37.1	36.5	99.2	97.6
Processed—					
Canned..... Net wt. canned	17.8	19.3	18.5	108.4	103.9
Frozen..... Retail wt.	3.8	4.6	5.7	121.1	150.0
Other..... Fresh equiv.	12.3	12.0	12.0	97.6	97.6
Oils and Fats..... Fat content	44.7	44.1	47.7	98.7	106.7
Margarine..... Retail wt.	9.4	8.7	8.9	92.6	94.7
Lard.....	7.8	7.4	6.9	94.9	88.5
Shortening.....	9.8	9.9	12.8	101.0	130.6
Salad and cooking oil.....	4.7	4.7	6.4	100.0	136.2
Butter.....	18.2	18.6	17.8	102.2	97.8
Eggs..... Fresh equiv.	32.8	32.0	30.8	97.6	93.9
Meat..... Carcass wt.	143.8	150.0	148.8	104.3	103.5
Pork.....	50.3	49.2	47.7	97.8	94.8
Beef.....	74.6	81.7	82.7	109.5	110.9
Veal.....	7.1	8.4	7.0	118.3	98.6
Mutton and lamb.....	3.5	2.8	3.6	80.0	102.9
Offal.....	4.0	3.6	3.6	90.0	90.0
Canned meat..... Net wt. canned	5.4	5.5	4.2	101.9	77.8
Poultry and Fish..... Edible wt.	37.8	40.7	..	107.7	..
Hens and chickens ⁴ Eviscerated wt.	24.3	26.7	28.7	109.9	118.1
Other poultry.....	8.8	10.0	10.9	113.6	123.9
Fish and shellfish, fresh and frozen..... Edible wt.	8.5	9.0	..	105.9	..

For footnotes, see end of table.

44.—Per Capita Supplies of Food Moving into Consumption 1965 and 1966 with Average for 1961-65—concluded

Kind of Food and Weight Base	Pounds per Capita per Annum			Percentages of 1961-65 Average	
	1961-65 Average	1965*	1966	1965*	1966
Poultry and Fish—concluded					
Fish, cured (smoked, salted, pickled)..... Edible wt.	1.5	1.6	..	106.7	..
Fish and shellfish, canned..... Net wt. canned	3.2	2.9	..	90.6	..
Milk and Cheese					
Swiss cheese..... Milk solids	60.6	60.5	61.3	99.8	101.2
Swiss cheese..... Retail wt.	6.7	7.2	7.2	107.5	107.5
Other cheese..... "	1.6	1.9	2.0	118.8	125.0
Cottage cheese..... "	1.5	1.6	1.6	106.7	106.7
Evaporated whole milk..... "	16.8	16.1	15.7	95.8	93.7
Condensed whole milk..... "	0.9	1.0	1.1	111.1	122.2
Whole milk powder and cream powder ⁶ "	0.3	0.2	0.1	66.7	33.3
Skim milk powder..... "	7.8	7.1	8.2	91.0	105.1
Milk in ice cream..... "	28.7	27.4	31.8	95.5	110.8
Powdered buttermilk..... "	0.5	0.4	0.4	80.0	80.0
Fluid whole milk ⁷ "	324.4	318.5	313.2	98.2	96.5
Miscellaneous milk products ⁸ "	3.1	4.3	4.1	138.7	132.3
Vegetables..... Primary distribution wt.	11.6	11.1	10.4	95.7	89.7
Peas..... "	2.4	2.4	2.3	100.0	95.8
Coffee..... Green beans	9.2	8.7	8.1	94.6	88.0

* Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour quantities in all positions. ² Includes soybean flour. ³ Tomatoes canned, tomato juice, tomato paste and purée, and ketchup. ⁴ Exclusive of Newfoundland. ⁵ Includes process cheese. ⁶ Cream powder included in whole milk powder for 1965 and 1966. ⁷ Includes cream expressed as milk. ⁸ Includes evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products and concentrated liquid skim milk.

Disappearance of Meats and Lard.—Production of meats from slaughter in Canada, supply, distribution and per capita disappearance of meats and lard are shown in table 45. All estimates are on a cold carcass-weight basis except canned meats, which in terms of product.

45.—Supply, Distribution and Disappearance of Meats and Lard, 1963-67

Item	1963	1964	1965	1966*	1967
Animals slaughtered in Canada..... '000	2,653.6	2,925.1	3,287.9	3,232.7	3,139.3
Estimated dressed weight..... '000 lb.	1,408,778	1,551,246	1,707,369	1,725,087	1,689,172
Hand, Jan. 1..... "	33,719	41,085	45,045	46,770	44,121
Imports for consumption..... "	37,617	27,348	18,514	25,425	39,727
Total Supply..... "	1,480,114	1,619,679	1,770,928	1,797,282	1,773,020
Exports..... "	25,564	42,770	102,293	78,752	40,709
Used for canning..... "	18,251	19,813	19,789	21,189	23,444
Hand, Dec. 31..... "	41,085	45,045	46,770	44,121	41,481
DOMESTIC DISAPPEARANCE..... '000 lb.	1,395,214	1,512,051	1,602,076	1,653,220	1,667,386
PER CAPITA DISAPPEARANCE..... lb.	73.7	78.5	81.7	82.5	81.6
Animals slaughtered in Canada..... '000	1,049.6	1,091.5	1,317.2	1,123.3	1,056.7
Estimated dressed weight..... '000 lb.	127,436	134,800	165,078	140,270	133,556
Hand, Jan. 1..... "	3,867	5,094	5,918	4,363	3,312
Imports for consumption..... "	1	1	1	1	1
Total Supply..... "	131,303	139,894	170,996	144,633	136,868
Exports..... "	1	1	1	1	1
Used for canning..... "	1,419	1,424	1,248	1,598	1,714
Hand, Dec. 31..... "	5,094	5,918	4,363	3,312	3,855
DOMESTIC DISAPPEARANCE..... '000 lb.	124,790	132,552	165,385	139,723	131,299
PER CAPITA DISAPPEARANCE..... lb.	6.6	6.9	8.4	7.0	6.4

* For footnote, see end of table, p. 514.

45.—Supply, Distribution and Disappearance of Meats and Lard, 1963-67—concluded

Item		1963	1964	1965	1966*	1967
Mutton and Lamb—						
Animals slaughtered in Canada.....	'000	697.4	654.1	565.4	523.4	486.0
Estimated dressed weight.....	'000 lb.	30,481	28,711	24,548	23,085	21,148
On hand, Jan. 1.....	"	7,054	9,298	9,147	6,631	13,871
Imports for consumption.....	"	47,856	37,356	30,299	55,643	48,688
Total Supply.....	"	85,391	75,365	63,994	85,359	83,709
Exports.....	"	679	757	370	622	1,180
Used for canning.....	"	1,108	1,227	1,454	1,372	1,480
On hand, Dec. 31.....	"	9,298	9,147	6,631	13,878	8,730
DOMESTIC DISAPPEARANCE.....	'000 lb.	74,306	64,234	55,539	69,487	73,300
PER CAPITA DISAPPEARANCE.....	lb.	3.9	3.3	2.8	3.5	3.8
Pork—						
Animals slaughtered in Canada.....	'000	7,601.0	8,301.0	8,111.7	7,989.5	9,152.0
Estimated dressed weight.....	'000 lb.	978,295	1,060,651	1,029,270	1,027,172	1,180,250
On hand, Jan. 1.....	"	18,357	25,236	27,286	22,740	28,920
Imports for consumption.....	"	89,465	53,758	37,222	28,262	28,775
Total Supply.....	"	1,086,117	1,139,645	1,093,778	1,078,174	1,237,920
Exports.....	"	47,420	53,959	58,029	48,479	59,370
Used for canning.....	"	54,663	56,937	48,537	46,928	49,330
On hand, Dec. 31.....	"	25,236	27,286	22,740	28,920	30,620
DOMESTIC DISAPPEARANCE.....	'000 lb.	958,798	1,001,463	964,472	953,847	1,098,660
PER CAPITA DISAPPEARANCE.....	lb.	50.7	52.0	49.2	47.6	53.0
Canned Meats—						
Estimated production.....	'000 lb.	92,263	98,653	94,032	96,032	104,000
On hand, Jan. 1.....	"	29,478	17,560	15,880	12,097	12,400
Imports for consumption.....	"	16,407	13,780	15,142	19,644	26,100
Total Supply.....	"	138,148	129,993	125,054	127,773	142,500
Exports.....	"	21,991	8,324	6,107	4,886	4,200
On hand, Dec. 31.....	"	17,560	15,880	12,097	12,406	10,900
DOMESTIC DISAPPEARANCE.....	'000 lb.	98,597	105,789	106,850	110,481	127,400
PER CAPITA DISAPPEARANCE.....	lb.	5.2	5.5	5.5	5.5	6.0
Offal—						
Estimated production.....	'000 lb.	98,454	107,825	115,247	112,592	116,100
On hand, Jan. 1.....	"	5,001	6,217	6,835	7,493	6,900
Imports for consumption.....	"	4,743	2,850	2,048	1,997	4,000
Total Supply.....	"	108,198	116,892	124,130	122,082	127,000
Exports.....	"	23,911	34,013	45,201	39,918	39,400
Used for canning.....	"	2,057	2,034	1,815	2,677	2,300
On hand, Dec. 31.....	"	6,217	6,835	7,493	6,924	7,200
DOMESTIC DISAPPEARANCE.....	'000 lb.	76,013	74,010	69,621	72,563	78,000
PER CAPITA DISAPPEARANCE.....	lb.	4.0	3.8	3.6	3.6	4.0
Lard—¹						
Estimated production.....	'000 lb.	125,407	133,103	121,777	114,161	136,100
On hand, Jan. 1.....	"	6,263	5,844	6,976	5,086	6,100
Imports for consumption.....	"	17,073	16,001	20,734	24,727	24,000
Total Supply.....	"	148,743	154,948	149,487	143,974	166,200
Exports.....	"	23	34	31	44	700
On hand, Dec. 31.....	"	5,844	6,976	5,086	6,024	7,000
DOMESTIC DISAPPEARANCE.....	'000 lb.	142,876	147,938	144,370	137,906	159,200
PER CAPITA DISAPPEARANCE.....	lb.	7.5	7.7	7.4	6.9	8.0

¹ Quantity small; included with beef.
commercial lard production and estimated lard equivalent of renderable pork fat available from all unspe
slaughter.

² Trimmed of larding fat and excluding offal.

* Incl

Section 5.—Agricultural Statistics of the Census*

Canadian agriculture has experienced considerable change, particularly during the past two decades, the trend being to increased mechanization and specialization and to fewer but larger farms. Although agricultural production in value terms showed a large increase during the 1946-66 period, rising from \$1,331,000,000 to \$2,952,000,000 or by 121.8 p.c., its rate of increase was less than that of most other industrial groups. The proportion represented by agriculture of the "total gross domestic product at factor cost" in 1966 was 5.9 p.c. compared with 12.3 p.c. in 1946. In real terms, the increase in agriculture from 1946 to 1966 was 53.1 p.c. This represents an over-all annual rate of growth of 1.8 p.c. compared with an increase for all industries of 4.7 p.c. per annum.

The changes that have occurred in the agricultural industry are revealed by the results of the Census of Agriculture taken every five years. Certain analyses of the results of the 1966 Census are compared with those of the 1961 Census in this Section. The term *census-farm*, which is used throughout, refers to an agricultural holding of one acre or more in size with sales of agricultural products during the 12 months preceding the census date of \$50 or more. Census-farms having sales of \$2,500 or more during the preceding year are described as *commercial farms*.

Number and Area of Farms.—There were fewer census-farms in Canada in 1966 than in 1961, the number dropping 10.5 p.c. from 480,903 to 430,522. A decrease was shown in each province, the highest proportionate drop being 26.1 p.c. in New Brunswick and the lowest 2.5 p.c. in Newfoundland. On a regional basis, the trend was most pronounced in the Atlantic region where the decrease was 21.0 p.c. and least pronounced in the Prairie region where it was 7.4 p.c.

Although farm numbers were lower, the total area of census-farms was almost 1 p.c. higher, increases in the Prairie region and British Columbia more than offsetting decreases in the Atlantic and Central regions. Thus, while the number of census-farms in the Prairie region decreased 7.4 p.c., the farm area increased 2.8 p.c. Similarly, in British Columbia the number of farms decreased 4.3 p.c. but farm area increased 17.4 p.c.

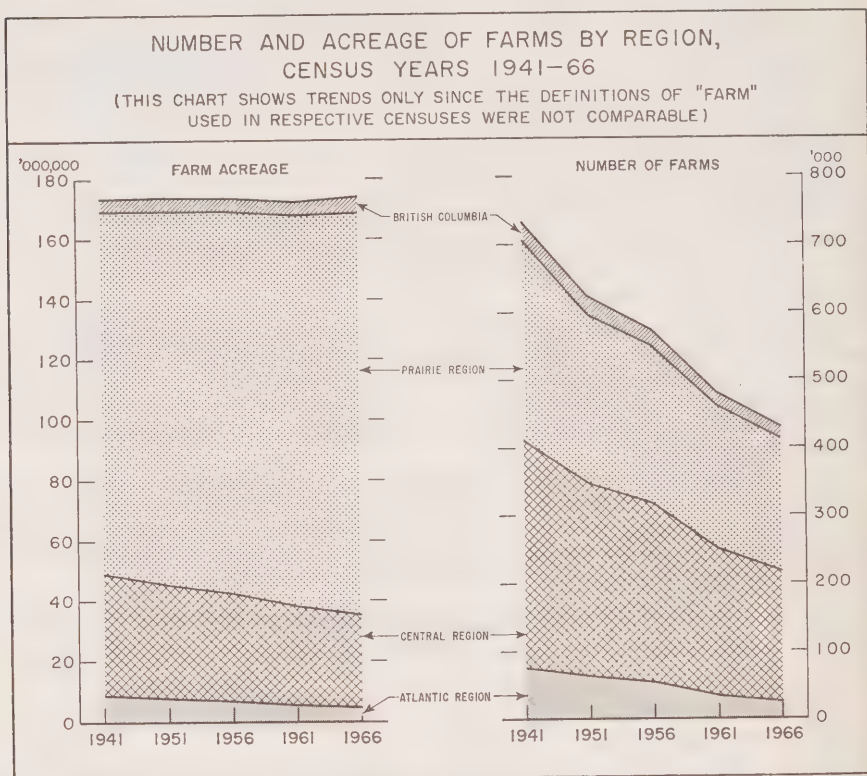
46.—Number and Area of Census-Farms and Commercial Farms, by Province, Censuses of 1961 and 1966

Province or Territory	Census-Farms				Commercial Farms			
	1961		1966		1961		1966	
	No.	acres	No.	acres	No.	acres	No.	acres
Newfoundland.....	1,752	54,561	1,709	49,513	281	17,940	301	21,292
Prince Edward Island.....	7,335	960,157	6,357	926,978	2,886	480,969	3,328	607,872
Nova Scotia.....	12,518	2,230,395	9,621	1,851,895	3,016	799,267	2,867	818,552
New Brunswick.....	11,786	2,199,675	8,706	1,811,695	3,073	860,853	2,938	898,091
Quebec.....	95,777	14,198,492	80,294	12,886,069	38,927	6,778,393	41,961	7,713,330
Ontario.....	121,333	18,578,507	109,887	17,826,045	69,667	12,317,676	70,724	13,229,561
Manitoba.....	43,306	18,169,951	39,747	19,083,817	24,286	13,008,496	27,372	15,807,662
Saskatchewan.....	93,924	64,415,518	85,686	65,409,363	63,546	51,413,768	69,962	57,698,415
Alberta.....	73,212	47,228,653	69,411	48,982,875	45,203	37,241,021	48,971	40,986,692
British Columbia.....	19,934	4,506,552	19,085	5,292,310	8,150	3,174,572	8,407	4,061,307
Yukon and North-west Territories.....	26	8,590	19	4,268	2	1,142	4	1,247
Canada.....	480,903	172,551,051	430,522	174,124,828	259,037	126,094,097	276,835	141,844,021

Of the 430,522 census-farms in 1966, 276,835 were classed as commercial, representing an increase over 1961 of nearly 7 p.c. There were more commercial farms in every province except Nova Scotia and New Brunswick but 75 p.c. of the increased number were located in the Prairie region. Commercial farms comprised 64.3 p.c. of all census-farms in 1966 but accounted for 81.5 p.c. of the agricultural land; in 1961 the proportions were 53.9 p.c. and

* Details are contained in Volumes III, IV and V of the 1966 Census of Agriculture. The 1968 Year Book contains, at pp. 527-531, summary figures relating to the economic classification and type of farms, the tenure and age of farm operators and farm electrification.

73.1 p.c., respectively. The total area of all commercial farms was 12.5 p.c. higher in 1966 than in 1961, an increase to which every province contributed. The largest percentage increase in area occurred in British Columbia and the largest increase in acreage occurred in Saskatchewan.



Land Use.—There was an increase in both the total land area and the improved land area of all census-farms in Canada between 1961 and 1966. Although the increase in total land area was only 0.9 p.c., the area of improved land was 4.6 p.c. higher. Most of the decrease in unimproved land was accounted for by a drop of more than 3,000,000 acres in woodland.

An interesting parallel exists between the 10.6-p.c. increase in the area in crops and the 9.2-p.c. decrease in the area in summerfallow. A good part of this is probably attributable to the increased use of fertilizer and better weed control measures which have lessened the need for summerfallow in the Prairie Provinces. The change expressed in acres, however, shows a different picture. There were 6,617,470 more acres in crops in 1966 than in 1961; on the other hand, the summerfallow acreage decreased by 2,611,703 acres. Therefore not all of the increased area in crops can be accounted for by the decrease in the area in summerfallow. A substantial part must be attributable to the increase in total land area of all census-farms and to the decrease in the area of unimproved land. The small increases in improved pasture and other improved land are probably also attributable to the decrease in the area of unimproved land.

47.—Use of Agricultural Land, by Province, Censuses of 1961 and 1966

Item	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	1961	1966	1961	1966	1961	1966	1961	1966
	acres	acres	acres	acres	acres	acres	acres	acres
Improved Land	20,455	20,566	579,558	569,799	497,521	485,859	734,107	638,649
Under crops ¹	12,919	12,409	391,112	398,373	329,114	314,143	482,548	427,832
Pasture (improved).....	4,097	5,320	167,913	152,191	127,468	132,355	200,047	166,835
Summerfallow.....	145	258	2,532	2,896	2,654	2,587	5,648	5,822
Other.....	3,294	2,579	18,001	16,339	38,285	36,774	45,864	38,160
Unimproved Land	34,106	28,947	380,599	357,179	1,732,874	1,366,036	1,465,568	1,173,046
Woodland.....	19,802	13,750	296,759	279,681	1,362,869	1,084,273	1,230,861	973,888
Other.....	14,304	15,197	83,840	77,498	370,095	281,763	234,707	199,158
Totals, Agricultural Area	54,561	49,513	960,157	926,978	2,230,395	1,851,895	2,199,675	1,811,695
Quebec		Ontario		Manitoba		Saskatchewan		
1961	1966	1961	1966	1961	1966	1961	1966	
acres	acres	acres	acres	acres	acres	acres	acres	
Improved Land	7,864,176	7,629,346	12,032,924	12,004,305	11,963,994	12,446,065	43,117,813	45,468,776
Under crops ¹	5,213,302	5,166,421	7,990,358	8,358,741	7,688,728	8,693,682	23,923,192	27,018,238
Pasture (improved).....	2,312,950	2,121,141	3,295,609	2,935,693	719,819	770,519	1,394,280	1,909,653
Summerfallow.....	46,344	48,779	244,842	229,852	3,230,095	2,668,830	17,179,572	15,895,825
Other.....	291,580	293,005	502,115	480,019	325,352	313,034	620,769	645,060
Unimproved Land	6,334,316	5,256,723	6,545,583	5,821,740	6,205,957	6,637,752	21,297,705	19,940,587
Woodland.....	4,501,305	3,777,489	3,257,589	2,834,417	1,490,673	1,212,959	2,194,920	1,347,741
Other.....	1,833,011	1,479,234	3,287,994	2,987,323	4,715,284	5,424,793	19,102,785	18,592,846
Totals, Agricultural Area	14,198,492	12,886,069	18,578,507	17,826,045	18,169,951	19,083,817	64,415,518	65,409,363
Alberta		British Columbia		Yukon and Northwest Territories		Canada		
1961	1966	1961	1966	1961	1966	1961	1966	
acres	acres	acres	acres	acres	acres	acres	acres	
Improved Land	25,288,527	27,276,251	1,303,263	1,614,141	1,088	620	103,403,426	108,154,377
Under crops ¹	15,614,839	17,707,659	788,896	955,287	526	219	62,435,534	69,053,004
Pasture (improved).....	1,670,391	2,310,945	354,830	436,920	492	168	10,247,896	10,941,740
Summerfallow.....	7,449,758	6,659,125	81,785	117,684	11	25	28,243,386	25,631,683
Other.....	553,539	598,522	77,752	104,250	59	208	2,476,610	2,527,950
Unimproved Land	21,940,126	21,706,624	3,203,289	3,678,169	7,502	3,648	69,147,625	65,970,451
Woodland.....	2,138,137	1,859,257	752,990	799,935	1,484	534	17,247,389	14,183,924
Other.....	19,801,989	19,847,367	2,450,299	2,878,234	6,018	3,114	51,900,236	51,786,527
Totals, Agricultural Area	47,228,653	48,982,875	4,506,552	5,292,310	8,590	4,268	172,551,051	174,124,828

¹ Includes field, vegetable, fruit and nursery crop land.

Size of Census-Farms.—During the 1961-66 period the average size of census-farms continued the previously observed rising trend, increasing by 45 acres from 359 to 404 acres; the average size over the 1951-66 period increased by 125 acres. On a provincial basis, the 1961-66 change varied from a decrease of two acres in Newfoundland to an increase of 77 acres in Saskatchewan. On a regional basis, the Prairies had the largest increase, from 617 to 685 acres, contrasted with the Central region where the increase was only from 151 to 161 acres.

The number of census-farms of 760 acres or more increased between 1961 and 1966 but those of under 760 acres declined. The pattern is generally similar in all provinces—the number of smaller holdings tends to decrease while the number of larger ones increases, although there is considerable variation among various size groups between provinces. Manitoba, Saskatchewan and Alberta, where the trend toward larger farms is more pronounced than in other provinces, also show slight increases in number of census-farms falling into the two smaller size groups—under nine acres and 10-to-69 acres.

For Prince Edward Island, Nova Scotia, New Brunswick, Quebec and Ontario the predominant size group is still the 70-to-239-acre group, even though there has been a drop in the number of census-farms in this category. The 240-to-399-acre group is the predominant one in the Prairie Provinces, but in Saskatchewan almost as many census-farms fall into the 400-to-559, 560-to-759 and 760-to-1,119-acre groupings as in the 240-to-399-acre category. In British Columbia the largest number of census-farms are in the 10-to-69-acre group. More than half of the census-farms in Newfoundland are under nine acres in size.

48.—Census-Farms classified by Size and by Province, Census 1966

Size of Farm	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Under 3 acres.....	363	40	173	73	416	1,794
3— 9 acres.....	590	96	337	131	1,009	4,078
10— 69 ".....	590	1,037	1,639	1,089	10,203	17,930
70— 239 ".....	144	4,337	4,915	4,879	54,789	64,959
240— 399 ".....	12	658	1,546	1,576	10,735	14,683
400— 559 ".....	5	137	594	689	2,355	4,080
560— 759 ".....	1	31	231	193	532	1,450
760—1,119 ".....	2	15	134	121	187	662
1,120—1,599 ".....	—	2	34	31	46	170
1,600 acres and over.....	2	4	18	24	22	81
Totals, Census-Farms.....	1,709	6,357	9,621	8,706	80,294	109,887
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Under 3 acres.....	228	197	323	1,083	2	4,692
3— 9 acres.....	594	315	792	3,575	1	11,513
10— 69 ".....	1,911	868	2,298	7,212	4	44,781
70— 239 ".....	8,139	8,858	12,648	3,217	8	166,893
240— 399 ".....	10,147	16,226	16,473	1,169	1	73,226
400— 559 ".....	7,085	14,553	10,966	731	—	41,095
560— 759 ".....	5,271	14,488	8,662	599	1	31,469
760—1,119 ".....	3,980	15,906	8,219	597	1	29,824
1,120—1,599 ".....	1,553	8,446	4,464	406	1	15,163
1,600 acres and over.....	839	5,829	4,566	496	—	11,881
Totals, Census-Farms.....	39,747	85,686	69,411	19,085	19	430,522

Farm Capital.—The total capital value of census-farms in Canada increased by 44.8 p.c. between 1961 and 1966, reflecting increases of 52.8 p.c. in the value of land and buildings, 38.3 p.c. in machinery and equipment, and 18.6 p.c. in livestock and poultry.

49.—Farm Capital, by Province, Censuses of 1961 and 1966

Province or Territory and Year		Value of Land and Buildings	Value of Machinery and Equipment	Value of Livestock and Poultry	Total Capital Value
		\$	\$	\$	\$
Newfoundland.....	1961	19,006,200	2,944,500	1,986,700	23,937,400
	1966	24,030,300	3,454,700	2,868,400	30,353,400
Prince Edward Island.....	1961	52,500,800	26,856,300	16,939,400	96,296,500
	1966	72,682,600	35,655,400	20,282,700	128,620,700
Nova Scotia.....	1961	89,262,800	30,252,100	26,073,900	145,588,800
	1966	102,849,400	34,443,700	26,492,000	163,785,100
New Brunswick.....	1961	90,114,800	31,682,200	23,566,000	145,363,000
	1966	91,628,500	36,824,900	22,325,500	150,778,900
Quebec.....	1961	1,014,681,500	301,257,000	308,941,100	1,624,879,600
	1966	1,159,021,200	373,979,600	350,868,900	1,883,869,700
Ontario.....	1961	2,572,302,700	579,281,700	590,011,600	3,741,596,000
	1966	3,451,145,600	758,397,800	674,586,200	4,884,129,600
Manitoba.....	1961	719,612,000	272,018,900	162,458,700	1,154,087,600
	1966	1,178,177,500	380,352,500	198,839,100	1,757,369,100
Saskatchewan.....	1961	1,856,523,300	686,825,700	321,010,300	2,864,359,300
	1966	3,500,966,300	1,020,618,300	389,851,900	4,911,436,500
Alberta.....	1961	1,715,367,200	550,875,500	451,254,100	2,717,496,800
	1966	2,865,472,200	785,031,700	565,115,700	4,215,619,600
British Columbia.....	1961	493,030,800	86,487,700	77,647,800	657,166,300
	1966	727,878,100	123,543,500	97,688,400	949,110,000
Yukon and Northwest Territories.....	1961	239,200	149,900	61,300	450,400
	1966	112,500	109,300	26,200	248,000
Canada.....	1961	8,623,641,300	2,568,631,500	1,979,948,900	13,171,221,700
	1966	13,173,964,200	3,552,411,400	2,348,945,000	19,075,320,600

Farm Tenure.—The decline in the number of farms and their increase in size and in capital investment led to changes in farm tenure in Canada between 1961 and 1966. The proportions of census-farms operated by the owner and operated by a manager remained fairly constant between 1961 and 1966 but there was a small decrease in the proportion of those operated by a tenant which was compensated by an increase in the part-owner-part-tenant category.

The number of census-farms operated by the owner decreased by almost 40,000 from 2,824 to 313,156 in the five-year period but the proportion of the total accounted for by such farms dropped only from 72.9 p.c. to 72.2 p.c., indicating that the decrease was largely a reflection of the smaller number of census-farms in 1966. The relative importance of owner-operated farms decreased from 5.8 p.c. in 1961 to 4.6 p.c. in 1966, but this represented a drop of almost one third in number from 27,696 to 19,769. While the number of part-owner-part-tenant-operated farms dropped slightly, their relative importance increased from 20.8 p.c. of the total to 22.7 p.c.

In the *Atlantic region* there was a drop of 4.1 p.c. in the proportion of census-farms operated by the owner which was offset by an increase of 3.8 p.c. in the part-owner-part-tenant category. The drop of about 7,000 in the number of census-farms between 1961 and 1966 was almost identical to the decrease in the number of owner-operated farms during the same period. The number of census-farms in the other three tenure groups, which accounted for only 15.8 p.c. of the total in 1966, changed little in the five-year period.

In the *Central region* owner-operated farms accounted for 82.4 p.c. of the total number in 1966 compared with 85.1 p.c. in 1961 and part-owner-part-tenant-operated farms increased from 11.2 p.c. to 14.1 p.c. The proportion of tenant- and manager-operated census farms remained almost identical for both years. The number of owner-operated farms decreased by approximately 28,000 between 1961 and 1966, which was slightly more than the decrease in the total number of all census-farms for the region. Tenant-operated census-farms dropped from 6,863 in 1961 to 5,656 in 1966, while the part-owner-part-tenant group increased from 24,400 to 26,880. The manager-operated group remained virtually unchanged.

Contrary to the situation in other regions, the proportion of owner-operated census farms in the *Prairie region* increased during the 1961-66 period, even though there was a drop of some 3,000 census-farms in this group. In 1961 the 119,769 owner-operated farms represented 56.9 p.c. of the total and in 1966 the 116,683 owner-operated farms accounted for 59.9 p.c. of the total; tenant-operated census-farms accounted for 9.4 p.c. of the total in 1961 and 6.7 p.c. in 1966; and the part-owner-part-tenant-operated farms, although decreased in number, accounted for a slightly larger proportion of the total (32.8 p.c.) in 1966 than in 1961 (33.2 p.c.). There was little change in the number and proportion of manager-operated census-farms.

In *British Columbia* the number of owner-operated census-farms decreased by 1.17 between 1961 and 1966, representing a drop of 2.5 p.c. in the proportion of this group to the total. This was larger than the decrease in the total number of census-farms, indicating a shift away from the owner-operated category. There was also a small decrease in the number and proportion of the tenant-operated group but the proportion of part-owner-part-tenant census-farms increased from 13.2 p.c. of the total to 16.2 p.c. Here, too, the number and proportion of manager-operated census-farms remained virtually unchanged.

Size of Census-Farms by Tenure.—The average size of census-farms in 1966 ranged from 3,383 acres for those operated by a manager to 264 acres for the owner-operated group. Tenant-operated census-farms averaged 375 acres in size and those in the part-owner-part-tenant-operated category averaged 783 acres. The average size of all census-farms was 404 acres. There was a high degree of correlation between size of census-farms and tenure. A large proportion of the owner-operated farms fell into the smaller size groups, while the part-owner-part-tenant-operated category accounted for a high percentage of the large size groups. In 1966, 91 p.c. of all census-farms under three acres in size were operated by the owner but in the size group 1,600-acres-and-over only 17.1 p.c. were owner-operated. The opposite trend was observed in the part-owner-part-tenant category which accounted for 74.6 p.c. of all census-farms of 1,600 acres and over but for only 0.9 p.c. of those under three acres.

Farm Capital by Tenure.—The influence of farm capital on tenure is a logical consequence to the increasing size of census-farms. As census-farm operators increase the size of their holdings, substitute machinery for labour and increase their livestock operation there is a parallel increase in farm capital, which is reflected in the type of tenure. For example, owner-operators wishing to expand may seek to rent additional land, because of the limited amount of capital at their disposal, thereby causing a shift from the category of owner-operated census-farms to the part-owner-part-tenant category. Similarly, a manager operator may prefer to rent a larger farm than to own a small one, or a number of tracts of land may be amalgamated by an entrepreneur who hires a manager.

In 1966, census-farms operated by a manager had, on average, a much larger capital investment than those operated under other forms of tenure. They also had the largest average capital investment in land and buildings, machinery and equipment and livestock and poultry. Owner-operated census-farms had the lowest capital investment per census farm, the lowest average value of land and buildings, the lowest average value of machinery and equipment, but only the second lowest average value of livestock and poultry. Tenant

operated census-farms had the lowest average value of livestock and poultry. It is interesting to note that the proportion of the capital investment in land and buildings, machinery and equipment and livestock and poultry did not vary much among the four forms of tenure.

Non-resident Operators.—A census-farm operator is classified as non-resident if he reports that he did not live on the holding during the past 12 months. In 1966 there were 65,226 non-resident census-farm operators, representing 8.2 p.c. of all the census-farms in Canada; in 1961 the 37,099 non-resident operators represented 7.7 p.c. of the total. Approximately three quarters of the non-resident census-farm operators for all of Canada were found in the Prairie region, where they accounted for 14.3 p.c. of the census-farms for that area. Non-resident operators were least significant in the Atlantic region where there were only 714, representing 2.7 p.c. of the total number of census-farms.

Among the provinces, Saskatchewan had, by far, the largest number of non-resident census-farm operators—16,861, comprising 19.7 p.c. of all the census-farms in that province; Newfoundland, with 100 non-resident operators, had the smallest number. The smallest proportion was found in Quebec where non-resident operators accounted for only 1.9 p.c. of the census-farms.

Farm Mechanization and Labour.—One of the most significant trends observed on Canadian farms in the postwar period has been the increased mechanization and the decreasing use of labour. While this process is continuing, a larger share of the farm capital is being channelled into land, buildings and livestock. The amount of capital invested in machinery and equipment on Canadian census-farms increased by 38.3 p.c. between 1961 and 1966. However, the value of machinery and equipment as a proportion of the total capital decreased from 19.5 p.c. to 18.6 p.c. during this period, similar to the trend observed between 1951 and 1961. The average value of machinery and equipment per census-farm in the Prairie region in 1966 was \$11,219. In the Atlantic region it was \$4,182 and in the central region \$5,954. The average value of machinery and equipment per acre under crop was lowest in the Prairie region and highest in the Atlantic region and in British Columbia where the average area under crops per farm is lower. Table 50 illustrates the increasing mechanization on farms between 1961 and 1966. Every item of machinery and equipment enumerated showed an increase over 1961 except for automobiles.

50.—Farm Machinery, by Province, Censuses of 1961 and 1966

Item and Year		Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
		No.	No.	No.	No.	No.	No.
Automobiles.....	1961	323	4,713	6,618	6,872	55,385	110,773
	1966	426	5,026	5,700	5,869	56,464	104,539
Tractor trucks.....	1961	715	3,253	5,965	4,657	26,597	62,812
	1966	764	3,306	5,393	4,404	24,499	67,622
Tractors.....	1961	462	5,713	7,074	8,102	70,697	150,046
	1966	519	6,341	7,252	7,989	81,674	162,303
Win combines.....	1961	2	644	154	770	3,046	22,387
	1966	—	1,020	252	965	6,108	25,372
Wind-up hay balers.....	1961	29	1,047	1,419	1,586	13,212	28,061
	1966	53	1,806	2,128	2,300	24,574	38,201
Large crop harvesters.....	1961	6	74	158	158	1,551	8,945
	1966	9	90	175	166	3,705	11,567

50.—Farm Machinery, by Province, Censuses of 1961 and 1966—concluded

Item and Year	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.
Automobiles.....1961	34,619	72,152	52,167	14,322	7	357,951
.....1966	35,800	72,571	53,171	16,381	10	355,957
Motor trucks.....1961	31,806	82,669	71,508	12,004	26	302,012
.....1966	36,689	102,470	85,559	14,116	14	344,836
Tractors.....1961	61,463	126,613	102,624	16,974	21	549,789
.....1966	65,552	134,908	112,245	19,676	24	598,483
Grain combines.....1961	23,662	65,084	38,530	1,331	1	155,611
.....1966	24,815	67,144	42,838	1,667	1	170,182
Pick-up hay balers.....1961	8,573	17,283	15,632	2,679	1	89,522
.....1966	12,712	26,155	25,161	3,858	6	136,954
Forage crop harvesters.....1961	1,175	1,429	2,059	1,208	1	16,764
.....1966	1,591	2,203	3,237	1,573	1	24,317

Hired Agricultural Labour.—There were 12.8 p.c. fewer paid year-round workers employed on census-farms in Canada in 1966 than in 1961. The number of census-farms reporting cash wages paid was 14.7 p.c. lower but cash wages paid increased by 11.1 p.c.

Most of the decrease in the number of paid year-round agricultural workers occurred in the Central region where only 20,305 were employed in 1966 compared with 25,695 in 1961; in the Prairie region there was very little change.

Off-Farm Work.—Off-farm work as an alternate source of income is increasing on Canadian census-farms. In 1966, 165,723 census-farm operators reported that they had worked off their holding during the previous 12 months; the corresponding number in 1961 was 153,675. The proportion of all census-farm operators reporting off-farm work increased from 32.0 p.c. in 1961 to 38.5 p.c. in 1966. It was highest in the Atlantic region (48.2 p.c.) and in British Columbia (50.0 p.c.) and lowest in Saskatchewan (27.4 p.c.).

Economic Classification and Types of Farms.—Economic classification consists in the grouping of census-farms according to the value of agricultural products sold during the 12-month period preceding the census date, June 1. On a national basis, 13.5 p.c. of all census-farms had sales of \$5,000 to \$7,499 in 1966. This economic class comprised the largest number of commercial farms (with sales of \$2,500 or more) of all the sales groupings. The predominant economic class of commercial farms in all four provinces in the Atlantic region and in Quebec was \$2,500 to \$3,749. The predominant class for Ontario and the three Prairie Provinces was \$5,000 to \$7,499. Although the economic class \$2,500 to \$3,749 comprised the largest number, commercial farms in British Columbia were fairly evenly distributed within the ranges of sales for commercial farms.

The average total capital value per census-farm in 1966 was \$44,307, an increase of 61.8 p.c. over the average of \$27,389 in 1961. The 1966 average was made up of \$30,600 in land and buildings, \$8,251 in machinery and equipment and \$5,456 in livestock and poultry. The average total capital investment per acre in 1966 was \$110.

Much of the increase in total farm capital in 1966 was accounted for by a large increase of 52.8 p.c. in the value of land and buildings, compared with increases of 38.3 p.c. in machinery and equipment and 18.6 p.c. in livestock and poultry. The value of land and buildings made up 69.1 p.c. of the total farm capital in 1966, compared with 65.5 p.c. in 1961; in the same comparison the value of machinery and equipment accounted for 18.6 p.c. and 19.5 p.c., respectively, and the value of livestock and poultry for 12.3 p.c. and 15.0 p.c., respectively.

There were more census-farms in the lower capital values in the Atlantic region and in Quebec than there were in other areas. In New Brunswick, for example, 74.4 p.c. of all census-farms had a total capital investment of less than \$19,950. The corresponding proportion in Saskatchewan was 17.6 p.c. Also, census-farms with higher capital investments tend to have larger sales of agricultural products. For instance, of all the census-farms with a total capital value of between \$24,950 and \$49,949, 86.2 p.c. had sales of agricultural products of less than \$10,000. However, of those with a capital value of \$49,950 to \$99,949 only 51.5 p.c. had sales of less than \$10,000.

Commercial Farm Classifications.—In 1966 only commercial farms were classified by product type. A criterion of 51.0 p.c. or more of the total sales was used for the classification. For example, a commercial farm was typed as a poultry farm if 51.0 p.c. or more of the total agricultural sales from this holding was obtained from the sale of poultry products. Of the 276,835 commercial farms, 71,413 or 25.9 p.c. were classified as wheat, and 70,936 or 25.6 p.c. were classified as cattle, hogs and sheep. These two types when added to the dairy type accounted for 71.9 p.c. of all the commercial farms in 1966. There was a change in the relative importance of the types between 1961 and 1966. In 1961, cattle, hogs and sheep farms were the most numerous followed by dairy and wheat. Dairy, poultry, fruits and vegetables, forestry and mixed combination farms decreased in relative importance.

On dairy-type farms in 1966, 74.5 p.c. of the income from the sale of agricultural products came from dairy products, 18.8 p.c. from the sale of livestock and 6.7 p.c. from the sale of all other agricultural products. The high degree of specialization on poultry-type farms is illustrated by the fact that 90.8 p.c. of the sales of agricultural products were from poultry and eggs. In contrast, livestock, the largest source of revenue on mixed combination farms, accounted for only 35.5 p.c. of the sales of agricultural products.

Total sales of agricultural products for all commercial farms in 1966 averaged \$11,462. The average of total sales per commercial farm for poultry-type farms, at \$35,334, was the highest and mixed combination farms reported the lowest average at \$8,920 per farm.

In 1966, only 3.7 p.c. of all commercial farms in Canada reported sales of agricultural products valued at \$35,000 and more, although 27.0 p.c. of the poultry-type farms reported total sales in excess of \$35,000. On the other hand, 17.0 p.c. of all commercial farms reported sales in the lowest category of \$2,500 to \$3,749; the proportion of forestry-type farms falling into this category was 45.9 p.c. The predominant economic class for all commercial farms was \$5,000 to \$7,499 in which six of the 10 farm types were classed. For poultry, other field crops, and miscellaneous specialty farms, the predominant economic class was higher than for all commercial farms taken as a group; for forestry-type farms it was lower.

The predominant size-group for all commercial farms in Canada in 1966 was 70 to 239 acres. This was also the predominant size-group for dairy, cattle, hogs and sheep, poultry, other field crops and mixed combination types of farms; the predominant size for fruits and vegetables and miscellaneous specialty farms was 10 to 69 acres.

For wheat and small grains farms there was a wide dispersion of farm numbers in the larger size-groups but the four size-groups falling between 240 and 1,119 acres accounted for 76.9 p.c. of all commercial farms typed as wheat; the five size-groups between 70 and 1,119 acres accounted for 86.5 p.c. of all small grains producing farms.

Of all the commercial farms in Canada in 1966, those typed as wheat reported the largest average capital investment per farm (\$67,535); in 1961, wheat farms ranked sixth in average total capital value per farm behind other field crops, small grains, miscellaneous specialty, cattle, hogs and sheep, and fruits and vegetable farms. In 1966 as in 1961, forestry-type farms had the lowest average capital value per farm (\$30,533).

The value of land and buildings accounted for more than 60 p.c. of the total capital value for each of the various types of commercial farms in 1966. For all commercial farms the value of land and buildings accounted for 68.3 p.c. of the total capital value and machinery and equipment for 19.1 p.c.

Section 6.—International Crop Statistics

Tables 51 and 52 are based on estimates published in March and April 1968 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1966 and 1967 with average for the years 1960-64, in the leading countries of the world.

51.—Estimated Acreages and Production of Wheat Harvested in 1966 and 1967 in Specified Countries, with Average for 1960-64

NOTE.—Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

Continent and Country	Acreages of Wheat ¹			Production of Wheat		
	Average 1960-64	1966	1967	Average 1960-64	1966	1967
	'000	'000	'000	'000,000 bu.	'000,000 bu.	'000,000 bu.
North America²	77,325	81,224	91,346	1,819.0	2,199.0	2,200.0
Canada.....	26,785	29,692	30,121	538.2	827.3	592.9
United States.....	48,481	49,867	59,004	1,221.9	1,311.7	1,524.3
Mexico.....	1,971	1,569	2,123	57.9	59.1	82.3
Guatemala.....	83	91	93	0.9	1.1	0.9
South America²	16,998	17,773	18,880	347.8	317.0	335.0
Argentina.....	11,651	12,883	14,581	263.2	229.5	257.2
Brazil.....	1,015	865	890	9.0	12.9	14.0
Chile.....	2,090	1,775	1,770	44.6	44.2	44.0
Colombia.....	350	272	163	4.6	4.6	2.9
Ecuador.....	166	161	161	2.3	2.1	2.2
Peru.....	377	370	370	5.5	5.1	5.1
Uruguay.....	1,107	1,200	—	15.6	15.4	—
Europe²	70,985	68,774	68,754	2,068.1	2,295.0	2,641.0
EEC—						
Belgium.....	513	525	492	29.3	23.9	30.5
France.....	10,459	9,865	9,721	431.6	415.1	528.5
Germany, West.....	3,430	3,431	3,495	173.8	166.6	213.8
Italy.....	11,000	10,561	9,913	303.5	345.5	351.4
Luxembourg.....	48	42	38	1.7	1.4	2.1
Netherlands.....	326	366	381	21.4	22.0	27.1
Total EEC.....	25,776	24,790	24,040	961.3	974.5	1,153.4
Austria.....	683	775	782	26.2	33.0	38.4
Denmark.....	299	231	225	17.9	14.7	15.5
Finland.....	598	516	623	15.5	13.6	18.6
Greece.....	2,690	2,515	2,315	63.3	72.0	67.9
Ireland.....	294	131	189	12.9	6.2	9.1
Norway.....	21	4	8	0.8	0.2	0.4
Portugal.....	1,754	1,211	1,606	19.3	11.2	20.8
Spain.....	10,251	10,380	10,549	151.4	179.2	205.7
Sweden.....	683	472	633	30.9	21.2	41.4
Switzerland.....	257	259	255	12.6	12.4	15.9
United Kingdom.....	2,064	2,238	2,305	121.0	127.7	143.7
Total Western Europe ²	45,375	43,527	43,535	1,434.6	1,466.0	1,731.0
Albania.....	283	—	—	3.4	—	—
Bulgaria.....	3,057	2,822	2,619	77.2	117.3	117.6
Czechoslovakia.....	1,739	2,204	2,296	61.8	82.6	91.9
Germany, East.....	1,027	1,196	1,260	47.3	55.9	62.5
Hungary.....	2,594	2,508	2,609	67.9	80.5	99.8
Poland.....	3,619	4,198	4,324	102.4	134.0	143.9
Romania.....	7,256	7,497	7,166	140.5	186.1	213.1
Yugoslavia.....	5,135	4,522	4,645	132.9	169.0	177.1
Total Eastern Europe ²	24,710	25,247	25,219	633.4	829.0	910.0
U.S.S.R. (Europe and Asia).....	169,000	173,000	162,600	1,837.2	3,123.0	2,388.0

For footnotes, see end of table.

51.—Estimated Acreages and Production of Wheat Harvested in 1966 and 1967 in Specified Countries, with Average for 1960-64—concluded

Continent and Country	Acreages of Wheat ¹			Production of Wheat		
	Average 1960-64	1966	1967	Average 1960-64	1966	1967
	'000	'000	'000	'000,000 bu.	'000,000 bu.	'000,000 bu.
Africa²	17,651	16,003	18,397	209.0	171.0	226.0
Algeria.....	4,733	3,656	—	46.7	26.5	49.6
Ethiopia.....	914	—	—	9.6	—	—
Morocco.....	3,905	4,043	4,389	38.0	29.8	40.0
Sudan.....	47	141	—	1.1	2.9	3.4
Tunisia.....	2,661	2,088	2,014	15.9	12.8	12.1
United Arab Republic.....	1,440	1,340	1,450	55.3	53.8	55.1
Kenya.....	267	340	377	4.6	6.6	7.5
South Africa, Republic of.....	2,851	2,463	3,050	31.7	20.8	38.7
Asia²	144,822	143,196	145,462	1,878.3	1,907.0	2,131.0
Cyprus.....	178	150	146	2.0	2.0	3.4
Iran.....	4,925	5,300	—	100.7	117.2	139.6
Iraq.....	3,060	—	—	26.4	23.1	25.7
Israel.....	128	189	222	2.5	3.7	8.1
Jordan.....	604	529	674	4.9	3.7	9.1
Lebanon.....	142	146	150	1.4	2.2	2.6
Turkey.....	16,400	17,700	17,800	256.5	301.3	330.7
Syria.....	2,750	2,800	—	26.7	14.7	22.0
China, Mainland.....	62,500	60,500	60,500	760.6	764.0	845.0
Afghanistan.....	5,700	5,800	—	80.8	74.3	88.2
India.....	33,123	31,272	32,457	397.2	383.0	423.6
Japan.....	1,475	1,014	909	50.7	37.6	36.4
Korea, South.....	328	378	375	9.9	11.6	11.4
Nepal.....	330	290	305	5.0	6.4	6.9
Pakistan.....	12,301	12,874	13,385	149.4	145.2	161.4
Oceania²	16,002	21,057	23,088	314.0	478.0	294.0
Australia.....	15,805	20,823	22,800	304.9	466.6	280.0
New Zealand.....	197	234	288	9.1	11.7	14.4
World Totals²	502,900	521,000	528,500	8,473.0	10,490.0	10,200.0

¹ Harvested acreage as far as possible.
not shown.

² Estimated totals include allowances for producing countries

52.—Estimated Production of Oats and Barley Harvested in 1966 and 1967 in Specified Countries, with Average for 1960-64

NOTE.—Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

Continent and Country	Oats			Barley		
	Average 1960-64	1966	1967	Average 1960-64	1966	1967
	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.
North America¹	1,342.2	1,205.3	1,110.2	585.4	705.0	629.7
Canada.....	397.3	374.7	304.2	171.9	301.2	248.7
United States.....	939.9	801.3	781.9	405.6	393.2	370.2
Mexico.....	4.8	5.6	5.2	7.8	10.5	10.7
South America¹	61.0	50.3	53.0	59.0	43.9	56.5
Argentina.....	48.5	37.2	39.6	34.6	20.1	32.2
Chile.....	8.1	7.9	11.0	5.6	5.4	6.1
Colombia.....	—	—	—	5.0	4.4	4.3
Ecuador.....	—	—	—	3.6	4.4	4.8
Peru.....	—	—	—	8.5	8.0	8.3
Uruguay.....	4.2	5.0	2.3	1.6	1.3	0.7

¹ Estimated totals include allowances for producing countries not shown.

52.—Estimated Production of Oats and Barley Harvested in 1966 and 1967 in Specified Countries, with Average for 1960-64—concluded

Continent and Country	Oats			Barley		
	Average 1960-64	1966	1967	Average 1960-64	1966	1967
	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.	'000,000 bu.
Europe¹	1,141.2	1,130.2	1,255.6	1,461.5	1,828.0	2,080.8
EEC—						
Belgium.....	27.1	20.2	24.9	21.0	22.3	28.7
France.....	169.9	177.6	190.0	286.6	340.8	446.6
Germany, West.....	143.4	161.2	187.3	157.7	177.7	217.4
Italy.....	34.0	32.9	38.3	12.2	11.6	13.5
Luxembourg.....	2.4	2.1	3.4	0.9	1.7	2.1
Netherlands.....	27.6	24.6	25.1	17.2	19.1	20.5
Total EEC.....	404.3	418.6	469.0	495.5	573.2	728.8
Austria.....	21.8	22.4	23.1	26.5	32.4	35.5
Denmark.....	44.9	59.5	62.3	148.9	191.0	201.4
Finland.....	54.9	60.7	64.9	14.4	27.4	31.3
Greece.....	9.7	12.0	11.2	11.4	29.3	38.5
Ireland.....	24.3	20.0	21.0	24.3	28.0	28.0
Norway.....	8.9	6.3	8.5	19.4	18.6	22.3
Portugal.....	5.1	4.3	8.3	2.6	2.3	4.0
Spain.....	29.2	28.8	30.5	86.9	100.3	120.9
Sweden.....	81.0	79.5	95.4	48.2	64.7	71.9
Switzerland.....	2.8	2.2	2.1	4.5	4.9	6.8
United Kingdom.....	110.6	77.1	95.3	270.6	400.6	431.3
Total Western Europe ¹	797.5	791.6	891.6	1,153.3	1,473.0	1,720.7
Bulgaria.....	10.6	11.7	11.7	29.5	48.9	45.3
Czechoslovakia.....	56.4	51.4	65.9	74.6	73.9	89.0
Germany, East.....	58.4	48.4	52.4	55.8	70.0	66.1
Hungary.....	8.0	5.0	4.3	44.1	42.1	42.6
Poland.....	175.3	183.6	192.9	61.6	65.1	64.3
Romania.....	12.1	11.7	11.7	18.3	22.2	24.8
Yugoslavia.....	22.7	26.6	25.1	24.2	32.7	27.8
Total Eastern Europe ¹	343.7	338.6	364.0	308.2	355.0	360.1
U.S.S.R. (Europe and Asia).....	425.3	516.8	468.5	740.2	1,102.3	1,111.5
Africa¹	11.0	8.3	14.8	90.0	78.5	116.7
Algeria.....	—	—	—	24.1	6.2	—
Morocco.....	1.0	0.8	0.8	51.2	23.2	50.5
Tunisia.....	—	—	—	6.3	3.7	4.1
United Arab Republic.....	—	—	—	6.5	4.7	5.1
South Africa, Republic of.....	7.5	6.8	12.7	1.7	1.4	1.9
Asia¹	97.3	94.4	95.8	841.9	808.6	845.1
Cyprus.....	—	—	—	3.4	3.2	5.1
Iran.....	—	—	—	43.6	45.9	46.9
Iraq.....	—	—	—	41.2	32.2	32.2
Israel.....	—	—	—	3.0	1.0	2.1
Syria.....	—	—	—	24.9	6.9	13.8
Turkey.....	30.0	31.0	32.7	152.0	160.8	174.5
Afghanistan.....	—	—	—	17.4	17.2	—
India.....	—	—	—	120.8	109.2	112.5
Japan.....	9.8	7.0	7.0	73.2	50.8	47.4
Korea, South.....	—	—	—	43.7	92.7	88.0
Pakistan.....	—	—	—	6.2	4.4	4.8
Oceania¹	82.3	136.2	54.6	53.4	69.8	43.1
Australia.....	79.6	133.8	52.5	48.9	64.1	37.2
New Zealand.....	2.7	2.4	—	4.5	5.7	5.8
World Totals.....	3,160.4	3,141.6	3,052.7	3,831.4	4,636.1	4,883.7

¹ Estimated totals include allowances for producing countries not shown.

CHAPTER XII.—FORESTRY*

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.*

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. Perhaps in no other country is the national wealth so dependent upon its forest resources and the success of its forest industries as in Canada.

The annual forest harvest of some 3,849,000,000 cu. ft. of roundwood supports a highly complex and diversified domestic and export industry. The forest industries (which include the logging industry, the wood industries and the paper and allied industries) provide more than 270,000 man-years of employment and pay out more than \$1,500,000,000 annually in salaries and wages. In addition, a considerable number of people derive part of their income from farm woodlot operations, etc. The forests support a large number of sawmills and wood-using plants which in many cases are located in small towns and villages and contribute appreciably to the local economies. The sale of forest products abroad represents about one fifth of the value of Canada's export trade.

The predominant part played by the pulp and paper, lumber and other forest products industries in the development of the country and in its current economy has resulted in a widespread tendency to evaluate the forest in terms of timber alone. But equally important is the fact that the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature—in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals. It is reassuring that a growing realization of the economic importance of the forest for its non-commercial values, including recreation and wildlife and watershed protection, is bringing about increasing recognition of the true value of the forest and is thus developing a broader concept of forestry.

* Sections of this Chapter that deal with forest resources and depletion and the federal forestry program were revised by the Forestry Branch of the Department of Fisheries and Forestry, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, were revised in the Forestry Section, Manufacturing and Primary Industries Division, Dominion Bureau of Statistics.

Section 1.—Forest Resources

Forest Regions.*—The forests of Canada cover a vast area in the north temperate climatic zone but wide variations in physiographic soil and climatic conditions cause marked differences in their character in different parts of the country; hence, eight fairly well-defined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:—

<i>Region</i>	<i>Percentage of Forest Area</i>		<i>Region</i>	<i>Percentage of Forest Area</i>
Boreal.....	82.1		Acadian.....	2.0
Great Lakes-St. Lawrence.....	6.5		Columbia.....	0.8
Subalpine.....	3.7		Deciduous.....	0.4
Montane.....	2.3			
Coast.....	2.2		TOTAL.....	100.0

Boreal Forest Region.—This Region comprises the greater part of the forest area of Canada, forming a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these are important in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward and, with increasingly rigorous climatic conditions, the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes-St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes-St. Lawrence Forest Region.—Along the Great Lakes and the St. Lawrence River Valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars and white birch, are intermixed and, in certain humid portions of the east, red spruce is abundant.

Subalpine Forest Region.—This is a coniferous forest found on the mountain uplands in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The presence of the black and the white spruces plus aspen and birch indicates a close relationship with the Boreal Region, and the characteristic species—Engelmann spruce, alpine fir and lodgepole pine—have boreal counterparts. There is some entry of blue Douglas fir from the Montane Forest and of western hemlock, western red cedar and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine, limber pine and, on the coastal mountains, yellow cedar and mountain hemlock.

Montane Forest Region.—The Region occupies a large part of the interior uplands of British Columbia as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States and comes in contact with the Coast, Columbia and Subalpine Forests. Ponderosa pine is a characteristic species of the southern

* A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by the Forestry Branch of the Department of Fisheries and Forestry.

portions. Blue Douglas fir is found throughout but more particularly in the central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region together with white birch are important constituents in the northern parts. The white spruce, although primarily boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

Coast Forest Region.—This is part of the Pacific Coast forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with abundant Sitka spruce in the north and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common toward the timber-line. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have a limited distribution. Arbutus and Garry oak, species whose centres of population lie southward in the United States, occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland.

Acadian Forest Region.—Over the greater part of the Maritime Provinces, exclusive of Newfoundland, there is a forest closely related to the Great Lakes-St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was once an important forest constituent but the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, although present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region.—A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the blue Douglas fir which is of general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

Deciduous Forest Region.—A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes-St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

Forest Land.—The forest area of Canada is estimated at 1,710,788 sq. miles, about 57 p.c. of which is "productive" in the sense that it is capable of producing merchantable timber; the remainder is incapable of producing merchantable timber because of adverse climatic, soil or moisture conditions or is reserve forest land for which no inventories are available. Table 1 shows the areas of productive and non-productive forest land in each province and territory; forest land in each province classified by type of growth is given in Chapter I at p. 25.

1.—Productive and Non-productive Forest Land, by Province

Province or Territory	Productive Forest Land	Non-productive Forest Land	Total
	sq. miles	sq. miles	sq. miles
Newfoundland.....	33,862	53,930	87,792
Prince Edward Island.....	813	121	934
Nova Scotia.....	15,080	1,194	16,274
New Brunswick.....	23,887	442	24,329
Quebec.....	220,625	157,500	378,125
Ontario.....	164,568	97,174	261,742
Manitoba.....	58,189	64,632	122,821
Saskatchewan.....	42,142	75,596	117,738
Alberta.....	116,572	41,023	157,595
British Columbia.....	208,411	59,227	267,638
TOTALS, PROVINCES.....	884,149	550,839	1,434,988
Yukon Territory.....	42,100	39,100	81,200
Northwest Territories.....	33,600	161,000	194,600
Canada.....	959,849	750,939	1,710,788

Inventories of the forest resources are made periodically by provincial forest authorities and, with their co-operation, the Forestry Branch of the Department of Fisheries and Forestry compiles national statistics. The latest estimates of the total stand of merchantable timber, by province and region, appear in Table 2. These estimates are subject to constant revision as more accurate and complete inventories are compiled.

2.—Estimate of Merchantable Standing Timber, by Type and Size and by Province and Region

Province and Region	Coniferous			Broadleaved			Totals		
	Large Material ¹	Small Material ²	Total	Large Material ¹	Small Material ²	Total	Large Material ¹	Small Material ²	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
Newfoundland.....	2,125	136,400	13,719	244	3,922	577	2,369	140,322	14,296
Labrador.....	1,105	70,000	7,055	77	2,353	277	1,182	72,353	7,332
Island.....	1,020	66,400	6,664	167	1,569	300	1,187	67,969	6,964
Prince Edward Island.....	20	1,829	175	7	800	75	27	2,629	250
Nova Scotia.....	2,149	50,824	6,469	1,529	20,988	3,313	3,678	71,812	9,782
New Brunswick.....	4,300	89,978	11,948	2,652	26,713	4,923	6,952	116,691	16,871
TOTALS, ATLANTIC PROVINCES.....	8,594	279,031	32,311	4,432	52,423	8,888	13,026	331,454	41,199
Quebec.....	59,702	290,220	84,371	17,472	73,985	23,761	77,174	364,205	108,132
Ontario.....	21,584	530,236	66,654	25,466	228,825	44,916	47,050	759,061	111,570
TOTALS, CENTRAL PROVINCES.....	81,286	820,456	151,025	42,938	302,810	68,677	124,224	1,123,266	219,702
Manitoba.....	1,863	92,498	9,725	1,065	24,188	3,121	2,928	116,686	12,846
Saskatchewan.....	1,742	102,637	10,467	3,174	76,822	9,704	4,916	179,459	20,171
Alberta.....	13,241	207,720	30,897	12,343	137,885	24,063	25,584	345,605	54,960
TOTALS, PRAIRIE PROVINCES.....	16,846	402,855	51,089	16,582	238,895	36,888	33,428	641,750	87,977
British Columbia.....	292,020	766,021	357,132	14,337	64,119	19,787	306,357	830,140	376,919
Yukon Territory.....	926	76,000	7,386	180	18,700	1,770	1,106	94,700	9,156
Northwest Territories.....	600	112,000	10,120	424	41,000	3,909	1,024	153,000	14,029
Canada.....	400,272	2,456,363	609,063	78,893	717,947	139,919	479,165	3,174,310	748,982

¹ Ten inches D.B.H. or over (suitable for saw timber).² Four to nine inches (units of 85 cu. ft.).

Tenure of Forest Land.—Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 23 p.c. of the productive forest land; the remainder comprises unalienated productive forest areas and federal lands such as Indian reserves, military reserves, etc.

Woodlots on the 430,522 farms (1966) across the country comprise about 3 p.c. of the total productive forest. These small wooded tracts, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also, the woodlots of Eastern Canada are, in general, highly productive because they lie in the southern part of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

3.—Tenure of Occupied Productive Forest Land, by Province

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land	Privately Owned Land			Total Occupied Productive Forest Land
	Leases and Licences	Permits and Sales	Total		Farm Woodlots	Other	Total	
Newfoundland.....	25,976	—	25,976	—	31	1,715	1,746	27,722
Labrador.....	19,219	—	19,219	—	—	—	—	19,219
Island.....	6,767	—	6,767	—	31	1,715	1,746	8,503
Prince Edward Island.....	—	6	6	3	417	382	799	808
Nova Scotia.....	1,148	19	1,167	31	2,130	9,525	11,655	12,853
New Brunswick.....	10,403	—	10,403	413	1,923	10,459	12,382	23,198
Quebec.....	77,805	—	77,805	225	6,878	18,436	25,114	103,144
Ontario.....	83,903	—	83,919 ¹	96	5,086	11,105	16,191	100,206
Manitoba.....	1,488	600	2,088	320	2,327	1,489	3,816	6,224
Saskatchewan.....	1,815	1,000	2,815	592	2,216	2,081	4,297	7,704
Alberta.....	7,659	—	7,659	1,631	3,817	—	3,317	12,607
British Columbia.....	3,834	2,344	6,178	920	1,147	9,141	10,288	17,386
Yukon Territory.....	—	—	—	25	2	—	2	27
Northwest Territories.....	—	—	—	2	—	—	—	2
Canada.....	214,031	3,969	218,016¹	4,258²	25,274	64,333	89,607	311,881

¹ Includes 16 sq. miles of "other" provincial Crown land.

² Of this total, 320 sq. miles are under lease or licence—293 sq. miles in Alberta, the 25 sq. miles in the Yukon Territory and the 2 sq. miles in the Northwest Territories.

Canada's Forest Trees.*—There are more than 150 tree species in Canada, of which 31 are conifers or 'softwoods'. About two thirds of these softwoods and one tenth of the large number of the deciduous or 'hardwood' species are of commercial value.

The spruces are the most important forest trees in Canada. Although red spruce is found only in Eastern Canada, and Sitka and Engelmann only in the far west, black spruce and white spruce are found from the Atlantic almost to the Pacific, and northward to Alaska. About one third of Canada's timber volume is spruce. The wood is used for pulpwood, lumber and plywood.

Second only to the spruces are the two-needled pines—jack pine, which grows from Nova Scotia to northern Alberta and the Northwest Territories, and lodgepole pine in western Alberta, British Columbia and Yukon Territory. These pines comprise 11 p.c. of Canada's standing timber volume.

Third in importance are the true firs, of which the most widely distributed is the balsam fir, found from the Atlantic seaboard west to north-central Alberta. In the far

* Prepared by John W. Ker, Professor of Forestry, University of New Brunswick; reproduced courtesy Timber-jack Machines Limited. The dominant species existing in each forest region are given on pp. 528-529 and detailed information is contained in Department of Fisheries and Forestry Bulletin No. 61, *Native Trees of Canada*.

west are three species: grand fir, which grows on the southern coast of British Columbia and in the southern interior; amabilis fir, found at intermediate levels on the coast; and alpine fir, which grows in the mountains and interior of British Columbia, the foothills of Alberta and southern Yukon Territory. The wood is commonly cut as pulpwood and to a lesser extent, as sawlogs.

Next in abundance is a family of eight broadleaved deciduous trees: the trembling aspen, largetooth aspen, balsam poplar and five cottonwoods—the eastern, black, lanceleaf, narrowleaf and plains cottonwood. The most widely distributed is the trembling aspen, followed by the balsam poplar. The black cottonwood reaches the largest size in this family. In demand for veneer stock, this species and its hybrids will yield large wood volumes per acre on short rotations under intensive management. The other species in this group are used in the manufacture of excelsior and soda pulp.

Fifth among Canada's forest trees is the hemlock. Three species are native to Canada: eastern hemlock grows in the Maritimes, southern Quebec and Ontario; western hemlock at lower and intermediate levels throughout the coastal and interior wet belts of British Columbia; and mountain hemlock at higher elevations in the southern mountains of British Columbia, growing down to sea level on wet, exposed sites on the northern coast and the panhandle of Alaska. Western hemlock is a valuable pulpwood species. Eastern hemlock is a main commercial source of tannin and the wood is used for railway ties, wood-stave pipe, lumber and pulp. Mountain hemlock is not important as a timber species.

The tree responsible more than any other for British Columbia's world-wide reputation for timber is the coastal form of the Douglas fir, which is dominant in the forests of the south coast and the southeastern half of Vancouver Island. An interior form, the blue Douglas fir, is widely distributed throughout the Rocky Mountain system. Douglas fir is used extensively for lumber, plywood, construction timbers, piling and kraft pulp.

Next in order are the cedars, including arborvitae and yellow cedar. The eastern white cedar is found from western Nova Scotia to Manitoba; its wood is light and resistant to decay. The western red is of prime importance to British Columbia. In virgin forests, it attains heights of 150 to 200 feet and diameters of 8 to 10 feet. It is used for lumber, hand-split shakes, shingles, poles and posts. At higher altitudes on the British Columbia coast, the red cedar is replaced by the yellow cedar. The wood of this species also resists decay and is prized for boat-building and interior finishing. It is useful for poles, piling and as battery separators.

Finally, there are the birches. Most abundant is the white birch which grows widely throughout Canada. Western white birch is a large tree, reaching heights of 100 feet and diameters of three to four feet. It is found in northern and western Alberta, in British Columbia and also on the Atlantic Coast in the east. However, the most important hardwood tree in Eastern Canada is the yellow birch, which grows in southern Newfoundland, the Maritimes, Quebec and Ontario. Its wood is much in demand for flooring, furniture, veneer and railroad ties.

Canada is indeed fortunate to possess such a diversity of useful tree species. The white pine and spruce in the east, and Douglas fir, western red cedar and western hemlock in British Columbia have won for Canada its enviable position as the world's leading nation in forest products trade.

Section 2.—Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The latest information available on the rate and causes of depletion of reserves of merchantable timber is given in Table 4. These data are not directly comparable with those given in previous Year Books. For instance, earlier DBS figures for British

Columbia differed from those issued by the British Columbia Forest Service because the latter used different conversion factors and different classifications for wood cut in the forests. The DBS is now using British Columbia Forest Service production figures so that the former confusion often encountered by users has been eliminated. Detailed information is given in DBS publication *Logging, 1963* (Cat. No. 25-201).

Table 4 shows only the depletion of the forests caused by utilization and by fire. Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available. Losses from insects and diseases alone are estimated to be in excess of 1,000,000 M cu. ft. of merchantable timber annually.

The productive forests of Canada covering an area of 959,849 sq. miles constitute the reserve from which forest production will be obtained in the immediate future. The supply of merchantable timber on this area is estimated at 748,982,000 M cu. ft. and the average annual utilization in 1956-65 of 3,326,494 M cu. ft. therefore represented less than one half of one percent of the supply. However, it should be noted that utilization does not occur evenly throughout the productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus, overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests if the forest industries are to maintain their important position in the Canadian economy. Also, efficient utilization of cut timber is an important factor related to forest depletion.

4.—Forest Utilization and Depletion by Fire, Ten-Year Average 1956-65

Item	Usable Wood	Percentage of Total Depletion
	M cu. ft.	
Products Utilized—		
Logs and Bolts—		
Domestic use.....	1,736,968	45.4
Exported.....	9,754	0.3
Pulpwood—		
Domestic use.....	1,155,330	30.2
Exported.....	118,235	3.1
Fuelwood.....	248,575	6.5
Other products.....	57,632	1.5
Totals, Utilization.....	3,326,494	87.0
Wastage—		
By forest fires.....	497,584	13.0
Totals, Depletion.....	3,824,078	100.0

Forest Fire Statistics.—The number of forest fires reported in Canada during 1967 totalled 8,650, second only to the record high of 8,655 reported in 1961. The 1967 total compares with 7,468 during the 1966 fire season and an annual average of 6,903 for the ten-year period 1957-66. Despite a near record number of fires, the area burned in 1967 was below the ten-year average—2,211,954 acres compared with 2,342,482 acres, respectively. Some 85 p.c. of the total acreage destroyed was reported within the provincial boundaries which accounted for the unusually high monetary losses in the latest year.

Of the 8,650 forest fires reported, some 6,429 or 74 p.c. were caused by human carelessness, recreationists accounting for 25 p.c. and settlers for 12 p.c. However, because a high proportion of man-caused fires occur in areas easily accessible to fire-fighting forces, fires attributed to this cause are generally more easily controlled than those started by lightning. Only 26 p.c. of all fires were ignited by lightning but this single cause accounted for 73 p.c. of the total area burned during the 1967 fire season.

5.—Forest Fire Losses, 1966 and 1967, compared with Ten-Year Average 1957-66

Item	Average 1957-66	1966	1967
Fires.....No.	6,903	7,468	8,650
Under 10 acres....."	5,782	6,705	7,189
10 acres or over....."	1,121	763	1,461
Area Burned.....acres	2,342,482	1,144,439	2,211,954
Merchantable timber....."	566,466	252,520	401,043
Young growth....."	498,216	394,453	461,595
Cut-over lands....."	285,948	18,636	92,896
Non-forested lands....."	991,852	478,830	1,256,420
Average Size of Fire.....acres	339	153	256
Merchantable Timber Burned—			
Saw timber.....M ft. b.m.	1,341,394	153,400	893,947
Small material.....cords	2,357,365	2,282,342	2,485,646
Estimated Values Destroyed¹\$	13,004,157	3,970,283	18,191,893
Merchantable timber.....\$	8,644,540	1,174,087	10,240,911
Young growth.....\$	2,873,914	2,186,001	5,562,226
Cut-over lands.....\$	426,141	73,544	354,534
Other property burned.....\$	1,059,562	536,651	2,034,222
Actual Cost of Fire Fighting\$	6,356,492	6,808,912	17,880,910
Totals, Damage and Fire Fighting Cost\$	19,360,649	10,779,195	36,072,803
Area under protection.....sq. miles	1,410,000	1,524,185	1,562,075

¹ Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

6.—Forest Fire Losses, by Province or Area, 1966 and 1967, compared with Ten-Year Average 1957-66

Province or Federal Lands	Averages 1957-66			1966			1967		
	Fires	Area Burned	Fire Fighting Cost and Damage	Fires	Area Burned	Fire Fighting Cost and Damage	Fires	Area Burned	Fire Fighting Cost and Damage
	No.	acres	\$	No.	acres	\$	No.	acres	\$
Province—									
Newfoundland.....	214	156,993	1,113,428	157	4,273	12,230	264	611,957	1,706,656
Prince Edward									
Island.....	1	1	1	1	1	1	1	1	1
Nova Scotia.....	509	7,614	77,981	817	2,812	26,537	318	5,768	130,260
New Brunswick....	411	14,138	322,700	639	4,224	200,899	311	4,889	147,958
Quebec.....	869	109,288	2,353,116	732	20,451	1,226,039	939	289,187	7,822,645
Ontario.....	1,489	143,708	4,458,840	1,921	14,415	762,642	1,465	63,502	2,778,730
Manitoba.....	381	524,861	1,175,790	235	6,154	147,241	638	322,096	907,601
Saskatchewan.....	266	395,870	1,123,776	216	33,201	1,139,213	418	321,016	3,426,050
Alberta.....	422	71,235	2,124,762	371	69,950	2,764,025	796	23,215	3,309,159
British Columbia...	2,117	438,039	5,598,218	1,967	54,788	2,304,769	3,216	244,483	14,987,860
Federal Lands—									
Yukon Territory...	64	227,296	374,684	103	393,048	876,912	73	169,835	455,584
Northwest									
Territories.....	112	245,756	590,805	248	540,941	1,310,817	129	165,507	366,389
National Parks....	34	7,211	36,643	33		1,028	71	10,354	30,082
Indian lands.....	2	2	2	2	2	2	2	2	2
Other federal lands (including military areas)...	15	473	9,906	29	179	6,843	12	145	3,829
Totals	6,903	2,342,482	19,360,649	7,468	1,144,439	10,779,195	8,650	2,211,954	36,072,803

¹ Not reported.

² Included in provincial figures.

7.—Forest Fires, by Cause, 1966 and 1967, compared with Six-Year Average 1961-66

Cause	Averages 1961-66		1966		1967	
	No.	p.c.	No.	p.c.	No.	p.c.
Recreation.....	1,738	24	1,809	24	2,157	25
Settlement.....	870	12	885	12	1,028	12
Woods operations.....	254	3	341	4	388	5
Railways.....	292	4	419	6	779	9
Other industries.....	335	5	384	5	385	4
Incendiary.....	315	4	280	4	290	3
Miscellaneous known.....	1,168	16	1,204	16	1,047	12
Unknown.....	377	5	460	6	355	4
Totals, Man-caused.....	5,349	73	5,782	77	6,429	74
Lightning.....	2,028	27	1,686	23	2,221	26
Totals, All Fires.....	7,377	100	7,468	100	8,650	100

Section 3.—Statistics of Forest and Allied Industries

This Section is concerned with the many industries engaged in the felling of timber and its transformation into a great variety of products required in modern living. The extensive forests of Canada provide raw materials for several large and growing primary industries, i.e., the sawmills and planing mills, the shingle mills, the veneer and plywood mills, the particle board plants and the pulp and paper mills, which in their turn provide raw materials for a wide range of secondary industries that convert the products of the primary industries into more highly manufactured goods such as sash, doors, mill work, wooden boxes, furniture, converted papers and paper goods, etc. However, much of the output of the primary forest industries is exported; the sawmill industry and the pulp and paper industry, especially, contribute substantially to the value of the export trade of Canada and thereby provide an important part of the foreign exchange necessary to pay for the imports from other countries.

Statistics of manufacturing activity and total activity of the wood industries and the paper and allied industries may be found in a number of tables in Chapter XVI on Manufactures. These statistics and those included in the tables of this Section are based on the revised standard industrial classification and the new establishment concept, explained in Chapter XVI.

Subsection 1.—Logging Industry

The forests of Canada provide the raw materials for its sawmills and planing mills, shingle mills, veneer and plywood mills, particle board plants and pulp and paper mills as well as roundwood for export in unmanufactured state and other products such as fuelwood, poles and piling, fence posts, mining timber, Christmas trees, etc. Tables 8 and 9 give the estimated quantities of wood cut in Canada by province and by type of product. In estimating the annual cut, certain factors have been used to convert commercial units to cubic feet. These are as follows (British Columbia estimates are supplied by the British Columbia Forest Service):—

Product		Equivalent Volume in Cubic Feet		
		British Columbia Coast	Interior	Other
Logs and bolts.....	M ft.b.m.	166.6	173.9	200
Pulpwood.....	cord	80	80	85
Fuelwood.....	"	80	80	80
Round mining timber.....	"	100	100	85
Wood for charcoal.....	"	...	...	80
Fence posts.....	No.	1	1	1.2
Fence rails.....	"	1	1	1

8.—Volume of Wood Cut, by Province, 1961-66

Province or Territory	1961	1962	1963	1964	1965	1966
	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.
Newfoundland.....	98,014	74,649	89,027	96,800	98,810	100,414
Prince Edward Island.....	10,157	5,514	6,045	6,072	6,685	6,663
Nova Scotia.....	96,747	81,907	86,554	104,640	106,792	108,209
New Brunswick.....	193,346	140,627	198,258	195,503	195,297	212,621
Quebec.....	914,096	876,043	913,542	933,096	935,709	994,015
Ontario.....	494,048	519,414	535,077	569,767	567,131	591,144
Manitoba.....	37,602	53,160	41,556	39,402	42,491	43,407
Saskatchewan.....	44,036	47,844	42,091	39,370	45,403	48,900
Alberta.....	118,390	131,706	133,472	124,475	126,584	130,268
British Columbia.....	1,167,051	1,342,936	1,473,423	1,514,595	1,533,113	1,602,437
Yukon and Northwest Territories...	1,815	4,106	3,965	3,265	2,654	3,676
Canada.....	3,175,302	3,277,906	3,523,010	3,626,985	3,660,669	3,841,754

9.—Volume of Wood Cut, by Type of Product, 1964-66

Type of Product	1964		1965		1966	
	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. ¹	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. ¹	Quantity Reported or Estimated	Equivalent Volume in M cu. ft. ¹
Logs and bolts.....M ft. b.m.	12,232,544	2,186,595	12,383,822	2,211,299	12,601,348	2,244,066
Pulpwood..... cord	13,966,603	1,184,947	14,219,455	1,206,516	15,925,964	1,351,483
Fuelwood..... "	2,433,987	195,519	2,262,938	181,035	2,143,564	171,483
Poles and piling.....M cu. ft.	20,056	20,056	17,880	17,880	22,957	22,957
Round mining timber..... cord	63,591	5,454	57,439	4,916	66,293	5,662
Wood for charcoal..... "	42,000	3,360	42,000	3,360	36,567	2,925
Fence posts..... No.	18,658,425	22,283	19,276,553	23,070	19,423,161	23,249
Fence rails..... "	789,404	789	912,041	913	882,412	883
Miscellaneous roundwood...M cu. ft.	7,982	7,982	11,680	11,680	19,046	19,046
Totals.....	...	3,626,985	...	3,660,669	...	3,841,754

¹ See text preceding Table 8.



New logging machinery and equipment is continually being designed and tested by individual industries and associations. One of the latest is the mobile machine that de-limbs, de-barks and cuts the tree into predetermined lengths in one operation.

Subsection 2.—Wood Industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter item is further subdivided into the wood preservation industry, the wood handles and turning industry, the woodenware industry, the cooperage industry and miscellaneous wood industries, *n.e.s.*

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particle board plants (the latter are included in the miscellaneous wood industries, *n.e.s.* group) mainly use roundwood as a raw material and sometimes are called primary wood industries and are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

Sawmill and Planing Mill Industry.—Lumber is by far the most important single product of this industry and, as shown in Table 10, British Columbia is the most important province in this field. It should also be noted that the shipment figures of Tables 10 and 11 contain a certain element of duplication because sales of lumber from one sawmill to another will be reported as shipments by both establishments. Similar situations occur in most industries to a greater or lesser extent.

In addition to the lumber produced by the sawmill and planing mill industry, a small amount is produced by establishments classified to other industries, bringing total lumber production in Canada in 1966 to 10,373,199 M ft. b.m. compared with 10,815,355 M ft. b.m. in 1965.

10.—Lumber Production and Shipments and Value of All Shipments of the Sawmill and Planing Mill Industry, by Province, 1965 and 1966

Province or Territory	Lumber			Value of Shipments of Goods of Own Manufacture
	Production	Quantity Shipped	Value of Shipments	
	M ft. b.m.	M ft. b.m.	\$'000	\$'000
1965				
Newfoundland.....	13,310	18,464	1,521	2,154
Prince Edward Island.....	6,088	2,029	142	216
Nova Scotia.....	204,768	178,887	13,396	16,708
New Brunswick.....	323,883	333,266	25,559	34,787
Quebec.....	1,409,941	1,317,460	102,706	126,667
Ontario.....	792,994	748,388	65,503	79,858
Manitoba.....	32,692	27,969	1,712	2,288
Saskatchewan.....	48,292	70,296	4,369	5,374
Alberta.....	309,113	379,876	22,071	25,390
British Columbia.....	7,019,209	7,426,943	511,725	602,218
Yukon and Northwest Territories.....	6,584	6,533	538	538
Canada.....	10,166,874	10,510,111	749,242	896,198
1966				
Newfoundland.....	10,545	14,097	1,181	1,427
Prince Edward Island.....	4,966	1,898	139	201
Nova Scotia.....	203,136	187,422	14,912	18,265
New Brunswick.....	299,332	332,418	25,850	35,725
Quebec.....	1,340,724	1,302,988	105,589	129,971
Ontario.....	889,059	766,743	72,289	90,466
Manitoba.....	32,911	31,826	2,042	2,447
Saskatchewan.....	67,385	94,145	6,064	7,031
Alberta.....	285,014	302,603	18,188	22,920
British Columbia.....	6,889,224	7,178,816	521,196	608,893
Yukon and Northwest Territories.....	5,494	4,978	325	332
Canada.....	10,007,790	10,217,934	767,773	917,676

11.—Quantity and Value of Lumber Shipments of the Sawmill and Planing Mill Industry, by Species, 1965 and 1966

Kind of Wood	1965		1966	
	Quantity	Value	Quantity	Value
	M ft. b.m.	\$'000	M ft. b.m.	\$'000
Spruce.....	3,948,615	255,072	3,908,229	265,324
Douglas fir.....	2,146,302	153,563	1,952,703	149,694
Hemlock.....	1,915,962	133,828	1,883,237	136,016
Cedar.....	692,497	58,746	708,681	61,421
White pine.....	303,888	29,372	310,219	31,813
Jack pine.....	347,352	24,046	331,004	22,255
Maple.....	172,137	19,443	184,529	22,712
Yellow birch.....	132,602	16,787	150,490	20,158
Lodgepole pine.....	280,223	15,459	253,672	15,141
Balsam fir.....	205,784	13,993	183,409	12,764
Other.....	364,749	28,933	351,761	30,475
Totals.....	10,510,111	749,242	10,217,934	767,773

Shingle Mill Industry.—Most of the shingles and shakes produced in Canada are from British Columbia mills. All establishments classified to this industry reported, for the year 1966, shipments of 1,966,366 squares of shingles and shakes valued at \$25,048,000, of which British Columbia accounted for 1,886,861 squares valued at \$24,362,000. However, it should be mentioned that considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle

machines or producing by hand; although no adequate measure of this production is available, it is known to contribute significantly to the total. Of the total production in 1966, 2,341,209 squares were exported, 2,299,847 squares going to the United States.

Veneer and Plywood Industry.—The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces and the production of softwood veneer and plywood almost entirely to British Columbia. For the latter, Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. Of the hardwoods, yellow birch is by far the most important species. Although most of the raw materials for this industry are of Canadian origin, some decorative woods are imported, particularly walnut.

About 50 p.c. of the shipments of veneer, shown in Table 12, are softwood veneers; most of these are further manufactured into plywood by Canadian mills, thus contributing to the shipments of plywood shown in the same table. Some of the hardwood veneers are also shipped to other veneer and plywood mills for further manufacture or to other industries such as the furniture industry for veneering purposes, but a significant portion is exported. Total exports in 1966 amounted to 1,029,634 M sq. ft. valued at \$31,761,000, of which 986,914 M sq. ft. valued at \$29,052,000 went to the United States.

Most of the plywood is consumed in Canada, although exports are not unimportant; in 1966 these amounted to 49,504 M sq. ft. of hardwood plywood valued at \$8,261,000 and 509,884 M sq. ft. of softwood plywood valued at \$33,257,000. The greater part of the exports of hardwood plywood went to the United States (46,235 M sq. ft. valued at \$7,378,000) but most of the softwood plywood exports went to Britain (378,090 M sq. ft. valued at \$24,769,000).

12.—Veneer and Plywood Shipments, by Type, 1964–66

Type	1964		1965		1966	
	Quantity	Value	Quantity	Value	Quantity	Value
	M sq. ft.	\$'000	M sq. ft.	\$'000	M sq. ft.	\$'000
Veneer.....	1,453,733 ¹	32,598	1,948,793 ¹	40,082	2,404,617 ¹	46,222
Softwood plywood.....	1,475,197 ²	115,300	1,555,975 ²	120,783	1,722,518 ²	132,931
Hardwood plywood.....	372,008 ³	38,090	384,899 ³	37,817	401,137 ³	40,563

¹ Surface measure.

² $\frac{3}{4}$ " unsanded basis.

³ $\frac{1}{2}$ " sanded basis.

Subsection 3.—Paper and Allied Industries

The standard industrial classification subdivides the paper and allied industries group into the following industries: the pulp and paper industry, the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. Statistics of manufacturing activity and total activity of the paper and allied industries group are given in Chapter XVI on Manufactures.

Pulp and Paper Industry.—This industry is by far the most important of the group. In fact, it has been for many years the leading industry in Canada, contributing about 2 p.c. of the total gross national product and almost 16 p.c. (1966) of the total value of the country's exports. There were 134 pulp and paper mills in operation in 1966.

These mills consume enormous quantities of roundwood, 17,752,553 rough cords with a cost value of \$472,527,000 being so used in 1966. In that year, 122,405 cords of pulpwood were imported and 1,371,000 cords were exported. In addition, the pulp and paper mills use wood residues of the sawmill and other industries for pulping, such as cores of peeler logs, slabs and edgings or wood chips made thereof, shavings, etc., and recently even sawdust has been used successfully for this purpose. The total of such wood residues used by

the industry in 1966 amounted to the equivalent of 5,202,347 rough cords of pulpwood, valued at \$106,695,000. The industry also consumes large amounts of electric power, chemicals and other goods and services and requires great quantities of clean water.

Some of the production of the pulp and paper industry is consumed in Canada or serves as a raw material for the paper-using or secondary paper and allied industries and certain other industries, but a great part of it is exported, particularly newsprint and various types of pulp (see Table 15), most of it to the United States. Some plants included in the pulp and paper industry classification also convert basic paper and paperboard into more highly manufactured papers, paper goods and boards but their output represents only a small part of Canada's total production of converted papers and boards. Tables 13 and 14 give shipment and production figures for pulp and shipment figures for basic paper and paperboards for 1962-66, Table 15 shows exports of pulp and of newsprint to Britain, United States and all countries for 1962-67, and Tables 16 and 17 give world pulp and newsprint statistics for 1965 and 1966.

13.—Pulp Shipments and Production, 1962-66

Item	1962	1963	1964	1965	1966
Mill Shipments of Pulp¹.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	3,690	4,023	4,412	4,650	5,066
	\$'000	\$'000	\$'000	\$'000	\$'000
	436,920	479,040	548,505	592,238	630,154
Groundwood pulp.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	287	287	321	330	319
	\$'000	\$'000	\$'000	\$'000	\$'000
	20,201	19,612	21,968	22,421	21,662
Chemical pulps.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	3,377	3,708	4,062	4,296	4,747
	\$'000	\$'000	\$'000	\$'000	\$'000
	415,937	458,773	525,790	569,195	547,533
Pulp Production².....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	12,133	12,474	13,742	14,573	15,958
Quebec.....	"	"	"	"	"
	4,611	4,732	5,204	5,450	6,022
Ontario.....	"	"	"	"	"
	3,052	3,074	3,817	3,357	3,587
British Columbia.....	"	"	"	"	"
	2,411	2,501	2,827	3,275	3,669
Other provinces ³	"	"	"	"	"
	2,059	2,167	2,893	2,491	2,680

¹ Includes screenings and unspecified pulps.

² The differences between these figures and the quantities

of mill shipments represent the amounts of pulp further manufactured by the reporting companies. ³ Prince Edward Island is the only province in which there is no production.

14.—Shipments of Basic Paper and Paperboard, by Type and by Province, 1962-66

Type and Province	1962	1963	1964	1965	1966
Type					
Newsprint paper.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	6,648	6,639	7,377	7,841	8,493
	\$'000	\$'000	\$'000	\$'000	\$'000
	819,078	809,247	887,613	927,832	1,025,048
Book and writing paper.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	434	460	491	535	621
	\$'000	\$'000	\$'000	\$'000	\$'000
	119,405	126,651	138,157	150,289	176,278
Wrapping paper.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	323	334	340	360	413
	\$'000	\$'000	\$'000	\$'000	\$'000
	69,892	72,457	76,431	80,240	89,685
Paperboard.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	1,092	1,214	1,297	1,420	1,534
	\$'000	\$'000	\$'000	\$'000	\$'000
	156,995	175,184	187,772	202,175	220,584
All other papers.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	164	178	200	171	183
	\$'000	\$'000	\$'000	\$'000	\$'000
	25,128	27,375	34,138	29,374	32,979
Totals.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	8,661	8,825	9,705	10,327	11,243
	\$'000	\$'000	\$'000	\$'000	\$'000
	1,190,498	1,210,914	1,324,111	1,359,910	1,544,576
Province					
Quebec.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	3,765	3,798	4,236	4,463	5,003
	\$'000	\$'000	\$'000	\$'000	\$'000
	504,061	509,685	567,560	597,420	686,562
Ontario.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	2,516	2,527	2,729	2,810	2,935
	\$'000	\$'000	\$'000	\$'000	\$'000
	376,444	384,603	411,691	423,496	456,241
British Columbia.....	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	1,161	1,201	1,315	1,521	1,603
	\$'000	\$'000	\$'000	\$'000	\$'000
	157,097	165,599	169,468	185,423	195,471
Other provinces ¹	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
	1,219	1,299	1,425	1,533	1,702
	\$'000	\$'000	\$'000	\$'000	\$'000
	152,896	161,026	175,493	183,571	206,302

¹ Prince Edward Island is the only province in which there is no production.

15.—Exports of Pulp and of Newsprint to Britain, United States and All Countries, 1962-67

Commodity and Year	Britain		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
Pulp	tons	\$'000	tons	\$'000	tons	\$'000
1962.....	251,742	27,723	2,398,802	298,166	3,044,458	369,902
1963.....	279,834	31,621	2,505,669	309,915	3,339,492	405,292
1964.....	338,663	38,464	2,676,940	346,017	3,636,281	460,854
1965.....	347,167	40,404	2,812,616	370,380	3,852,650	493,501
1966.....	323,766	35,588	2,977,846	390,760	3,854,000	492,961
1967.....	272,543	32,318	2,902,256	382,446	4,269,005	543,433
Newsprint						
1962.....	481,822	63,452	5,227,006	633,037	6,148,294	753,060
1963.....	458,814	60,213	5,251,125	636,086	6,211,946	759,990
1964.....	480,332	61,791	5,675,627	689,406	6,815,629	834,646
1965.....	370,372	46,932	6,112,414	735,611	7,189,700	869,586
1966.....	384,034	48,883	6,652,270	823,664	7,821,148	968,224
1967.....	336,041	43,642	6,340,321	815,780	7,463,801	955,261

World Pulp and Newsprint Statistics.—Figures of production, exports and imports of pulp for certain countries of the world are shown for 1965 and 1966 in Table 16. It is estimated that these countries produced 73 p.c. of the world supply of pulp in 1966.

16.—Production, Exports and Imports of Pulp, by Leading Countries, 1965 and 1966

(Source: FAO Year Book of Forest Products Statistics)

Country	1965 ¹			1966		
	Production	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada ¹	14,570	3,851	94	16,000	4,084	58
United States.....	33,279	1,454	3,119	35,621	1,551	3,335
Finland.....	6,143	2,334	4	6,288	2,444	6
Norway.....	2,027	963	48	1,997	953	82
Sweden.....	7,549	3,683	4	7,221	3,995	6

¹ Production figures differ slightly from DBS figures given in Table 13 because of a different basis of calculation.

Figures for the leading newsprint-producing countries for 1965 and 1966 are given in Table 17. The seven countries listed accounted for over 81 p.c. of the estimated world production in 1966, Canada contributing over 42 p.c.

17.—Estimated World Newsprint Production and Exports, by Leading Countries, 1965 and 1966

(Source: Newsprint Association of Canada)

Country	1965		1966	
	Production	Exports	Production	Exports
	'000 tons	'000 tons	'000 tons	'000 tons
Canada ¹	7,720	7,157	8,419	7,764
United States.....	2,180	84	2,408	99
Japan.....	1,309	6	1,301	26
Finland.....	1,189	1,090	1,330	1,210
Britain.....	860	3	825	3
Union of Soviet Socialist Republics.....	818	153	972	197
Sweden.....	753	490	760	474

¹ Figures differ slightly from DBS figures given in Tables 14 and 15 because of different bases of calculation.

Asphalt Roofing Manufacturers.—These establishments produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. They also produce asphalt, vinyl-asbestos and pure vinyl floor tiles. Their total shipments in 1966 were valued at \$54,452,000 compared with \$57,760,000 in 1965.

Paper Box and Bag Industries.—These industries include manufacturers of folding cartons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper bags. Their total shipments in 1966 amounted, respectively, to \$156,685,000, \$211,493,000 and \$144,046,000, compared with \$143,877,000, \$193,052,000 and \$120,918,000, respectively, in 1965.

Other Paper Converters.—This group produces a host of paper products such as envelopes, waxed paper, clay-coated and enamelled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins, toilet tissue, etc. The total value of manufacturing shipments of this industry in 1966 amounted to \$301,326,000 compared with \$261,964,000 in 1965.

Section 4.—Forest Administration, Research and Conservation

Subsection 1.—Federal Forestry Program

Administration.—The Federal Government is responsible through several departments and agencies for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, Indian reserves, military areas and forest experiment stations.

The main forestry functions of the Forestry Branch of the Department of Fisheries and Forestry (established as the Department of Forestry in 1960, re-named the Department of Forestry and Rural Development in 1966 when the Minister was given responsibilities under ARDA, and made a Branch of the Department of Fisheries and Forestry in 1969 when the ARDA responsibilities were transferred) include: (1) the conduct of research relating to the protection, management and utilization of the forest resources of Canada and the better utilization of forest products; (2) undertaking, promoting or recommending measures for the encouragement of public co-operation in the protection and wise use of the forest resources of Canada; (3) co-operating with provincial governments and others in matters relating to forestry; (4) provision of forest surveys and advice relating to the protection and management of federally administered forest lands; and (5) assuming responsibility for forest protection and management on federal lands at the request of the department or agency concerned. The Act provides for the establishment of research facilities and of forest experimental areas on federal lands.

The Branch maintains an Advisory Group to the Deputy Minister, whose main responsibilities are to develop policies and long-range plans for forest research, forest products research, forest economics and such other matters as federal-provincial relations and liaison with the forest industries and the academic community. A Directorate of Program Co-ordination provides national co-ordination of forestry research programs and supervises national research services at Ottawa. Research institutes and laboratories conduct fundamental research within prescribed fields, supporting and complementing the research programs carried out in seven administrative regions—Newfoundland, the Maritimes, Quebec, Ontario, Manitoba-Saskatchewan, Alberta-Yukon Territory-Northwest Territories, and British Columbia. Forest surveys are conducted on federal lands throughout the country and advice and assistance on forest management are given to the administering agencies. The Branch also provides for the management of forests, including timber disposal, in certain areas on behalf of other government departments. Co-operation is extended to the Canadian International Development Agency in administering technical

assistance programs involving forest surveys in other countries. The public information program conducted by the Branch includes the issuing of publications designed to increase public awareness of the importance of Canada's forest resources and the need for conserving them; the distribution of research publications and the interpretation of the scientific work of the Branch to industry and to the general public; the dissemination of departmental and forestry information to the press, radio and television; the production of exhibits, displays and posters; and the maintenance of a photographic library dealing with forestry subjects.

The research functions of the Branch are described in the following paragraphs.

Research on Silviculture, Tree Biology, Forest Soils and Fire.—The objects of such research are (1) to provide basic information on the characteristic occurrence, growth, development and behaviour of forest tree species throughout the wide range of forest types and environmental conditions of Canada and (2) to develop and test new or improved methods for use in forest management and forest fire control. The programs are conducted throughout Canada, often in co-operation with other federal departments, provincial forest authorities, other research agencies, universities and industry.

A substantial portion of the research program in silviculture involves the study of factors responsible for the success or failure of natural regeneration following various methods of cutting and treatment of seedbeds, and the development of improved methods of regenerating forest stands following logging or fire and of creating forests on abandoned farmland, heathland or bogland. Different methods of seeding and planting are being compared, and increased emphasis is being given to problems associated with container planting. The effects of mechanization of logging on reproduction and on slash and soil conditions are being investigated. Studies of different methods of stand tending such as pruning, cleaning and thinning are under way to determine means of increasing both quantity and quality of wood production. Investigations of successional changes are under way in most of the important forest types and the relation of forest growth to site is being studied with a view to the assessment of long-term productivity. The requirements of light, temperature and moisture that will produce optimum conditions for growth and development are being determined for seedlings. The physiological processes of growth and reproduction are under investigation for a limited number of species. In tree breeding, superior strains are selected or developed and there is a continual improvement in propagation and breeding techniques. Research in forest land encompasses forest geography and land classification. Research in soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Improved techniques for determining tree and stand volume are being developed and the various factors that influence growth are being investigated and quantified. Considerable attention is devoted to the evaluation of existing forest inventory methods and to developing new and improved techniques which incorporate the use of large-scale aerial photography. Studies of methods to estimate stand volumes from air photographs are continuing. Increased attention is being given to studies of growth and yield of typical forests and mathematical models are being developed to describe the growth responses of stands and individual trees.

Adequate protection of forests against fire is of vital importance in Canada. The Branch works in full co-operation with provincial forest services in almost all phases of forest fire control and has made major contributions in the fields of forest fire danger measurement and forecasting and in fire control planning. Investigations are being made of forest fire behaviour, of the use of prescribed fire for hazard reduction and seedbed preparation, of better methods of reporting forest fires, and of fire damage appraisal and related factors in forest protection standards. Studies are being continued in the use of chemicals for fire suppression and pre-suppression, of fire fighting equipment and techniques, and of the use of aircraft in forest fire control. Another important field of endeavour is the study of fire hazard created by slash from various kinds of logging practices for different species.

Forest Products Research.—This work is directed toward obtaining background data on the properties of Canadian woods, developing new and better uses for wood products, improving methods of processing, and effecting more complete utilization of wood substances. Activities cover all major aspects of forest products and include the determination of the physical, mechanical, chemical and anatomical properties of wood and their relation to adaptability in use; studies of factors affecting quality of wood and of manufactured wood products; determination of factors that cause wood waste in logging and manufacturing; investigation into fire retardant treatments, the preservative treatment and painting of wood and the use of wood for the manufacture of a variety of products by chemical or mechanical means; and studies to determine possible new economic and more valuable uses for woods and to determine methods for the economical utilization of all wood substances available from the annual timber harvest.

The program is conducted mainly at two laboratories—at Ottawa and Vancouver—with units consisting of timber engineering, containers, glues and gluing, veneer and plywood, timber physics, wood chemistry, pulping, wood preservation, paints and coatings, wood pathology, products entomology, wood anatomy, logging, lumber manufacture and lumber seasoning. Research results are made available to the thousands of plants comprising Canada's timber-manufacturing and wood-using industries. Liaison is maintained with these industries to ensure that the research being conducted is of optimum national benefit. There is also constant co-operation with various government units in the performance of many investigations concerned with the use of wood. Research into the use of wood in housing construction and as an engineered material continues in co-operation with the National Research Council and the Central Mortgage and Housing Corporation.

At regional establishments, products research is planned on utilization problems of regional interest, and products liaison officers visit sawmills and other wood-working plants to keep industry aware of research developments and technical advances and, on the other hand, to keep the department informed of field problems on which research would be of value.

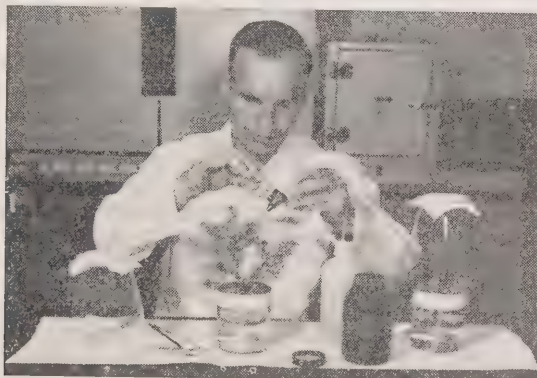
Branch personnel serve on many national and international technical committees concerned with forestry problems and continuous collaboration is maintained with forest products laboratories in other countries for the dual purpose of exchanging information and avoiding duplication of research.

Forest Insects and Diseases.—Research on forest insects and diseases is conducted at regional laboratories and field stations in all principal forest regions of Canada. A Canada-wide survey is undertaken in co-operation with the provincial forest services and forest industries to maintain an annual census of forest insect and disease conditions and to detect and predict the occurrence of outbreaks. Survey results are made available to owners and operators of forest lands for use in planning salvage programs and directing control measures to reduce damage.

Laboratory research programs are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects and diseases of tree seedlings in forest nurseries. Research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi. Problems of national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated.

Experiments are also carried out in insect and disease control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating quarantine pro-

grams, possibilities of eradication or control, or other applications of research results. Examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation and advisory services for local authorities on the Dutch elm disease problem; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick, the jack pine budworm in Manitoba, the ambrosia beetle in British Columbia, and the European pine sawfly in Ontario.



An insect pathologist at the federal Forest Research Laboratory in Fredericton, N.B., works on the development of virus insecticides, which is an important area of biological control research.



At the Petawawa Forest Experiment Station, Chalk River, Ont., an isolation tent is placed on a red-and-black spruce hybrid sapling to ensure self-pollination. Cross-breeding of species is carried out to develop faster-growing and more vigorous types.

Subsection 2.—Provincial Forestry Programs

All forest land in provincial territory, with the exception of the minor portions in National Parks, federal forest experiment stations, military areas and Indian reserves, is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland and Labrador.—Geographically, the Province of Newfoundland has two separate regions—the Island and Labrador on the mainland. The productive forest land is estimated at approximately 30,000 sq. miles about equally divided between the Island and Labrador. Most of Labrador's forests are leased but are as yet virtually untouched.

A large part of the forest land of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local populations. Within this coastal forest belt, every form of cutting is generally without intense control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by Forest Service Officers. Approximately one half of the Crown forests are at present under management. Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government.

The Island is divided into three forest regions, each of which is subdivided into five districts. Each region is under the control of a regional forester and each district is headed by a district ranger with a staff of rangers and assistant rangers. Twenty-five well-equipped forest fire depots and 20 lookout towers, connected by radiotelephone to district and regional offices, are operated by the Newfoundland and Labrador Forest Service; others are operated by the two paper companies which maintain their own forest fire protection organizations.

Forestry operations in Labrador are under the supervision of a regional ranger located at Happy Valley (Goose Airport). Forest fire protection bases are located near Goose Airport and at Labrador City, Churchill Falls, Cartwright and Makkovik.

The Forest Service operates 10 fixed-wing aircraft for forest fire detection and suppression and three helicopters for transporting men and equipment. The permanent Forest Service staff of approximately 90 persons is doubled during the fire season with the addition of seasonal employees.

Prince Edward Island.—Roughly one third of Prince Edward Island's 2,184 sq miles of land is tree-covered. The wooded areas consist of scattered patches throughout the province, the greatest concentration being in the eastern section. All of the woodland is privately owned except some three square miles of federal Crown land and about six square miles purchased recently through ARDA and turned over to the Crown in the right of the provincial government. The Forestry Division, Department of Agriculture, administers all forestry matters in the province but is mainly concerned with reforestation, protection and woodlot improvement. Although forestry is of secondary importance to the province, nevertheless the woodlots aid greatly in maintaining moisture for agriculture and form breaks against the average 15-mile-an-hour winds that blow across the Island.

The reforestation program has been increasing year by year, with as many as 500,000 trees being planted in one year on provincially owned and privately owned marginal and submarginal land. The forest management programs include the provision of access roads into Crown land areas and woodlot improvement; improvement cuts act as demonstration areas to the public, 4-H Forestry Clubs, and Boy Scout and Girl Guide groups. Fire protection is not too serious a problem. Wooded areas are relatively small and scattered and are all accessible by road so that equipment can be rushed to the scene of a fire quickly and easily.

Nova Scotia.—Of Nova Scotia's land area of 20,402 sq. miles, 16,274 sq. miles are classed as forested and 93 p.c. of the latter is regarded as productive. Although 91 p.c. of the forest land in Canada is held by the Crown in the right of the federal and provincial governments, only 22 p.c. is so held in Nova Scotia.

The provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Trained provincial personnel are also employed with some of the forest industries in the administration of privately owned forest lands. The Department administers the Lands and Forests Act as it pertains to all lands, and is responsible for forest fire suppression. Forest fire detection is facilitated through 34 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia, contributing directly or indirectly over \$100,000,000 to the gross provincial product annually. There are in operation some 400 sawmills of various types and sizes, one hardboard mill, two groundwood pulp mills, and two chemical pulp mills. These mills processed 200,000,000 ft. b.m. of sawn materials and 587,000 cords of round products in 1967. In addition, 106,000 cords of pulpwood were exported.

The reforestation program, active since the 1930s, is being expanded by the enlargement of the main Lawrencetown nursery and the establishment of a new forest nursery in the Margaree Valley of Cape Breton Island. Experimental work on soil capability and site preparation on fire barrens is being continued. About 1,000,000 seedlings are planted each year. Timber, pulpwood and Christmas trees are sold through public tender, and cutting on Crown land is done under recommendation of district foresters of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands, and a program of operating these lands under sustained-yield management plans is under way. Silvicultural techniques, including thinning, conversion cutting, aerial and ground fertilization, bog-ploughing and the use of silvicides, were applied to 5,000 acres of Crown lands in 1967.

A new provincial forest inventory, which is a continuous system designed to operate on a seven-year cycle was in its second year in 1968. Concurrently, a system of permanent sample plots will provide continuing data on growth and drain.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation. Investigations cover stand improvement, tree nutrition, cutting methods, and insect and disease activities. Extension projects include fire prevention, a film program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmill operators.

New Brunswick.—Of the total land area of New Brunswick (27,835 sq. miles), approximately 86 p.c. is classed as productive forest, of which the Crown, in right of the province, owns about one half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The results of a provincial forest inventory, part of the national forest inventory, were published in 1958. The total volume of standing timber in the province is estimated at 16,900,000 M cu. ft.; coniferous species make up 71 p.c. and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Natural Resources which also carries out duties in connection with game management and protection, provincial parks, mines, water, tourism and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest Management Licences

authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Royalty is paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the federal Forestry Branch in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in forestry leading to B.Sc.F. and M.Sc.F. degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the Governments of New Brunswick and Nova Scotia and with private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The provincial Department of Agriculture also provides an expanding extension service to the owners of farm woodlots.

Quebec.—The forests of Quebec extend over an area of some 378,000 sq. miles, lying between the southern boundary of the province and an irregular line roughly following the 52nd parallel of latitude on the north, an irregular line following the Atlantic Coast to the east and the Ontario boundary to the west. Of these forests, 34 p.c. are limits or reserved for specific purposes under forest management plans; their main purpose is to supply pulp and paper mills and sawmills. The vacant forests, comprising 56 p.c. of the forest area, have not as yet been completely inventoried or managed although some logging is being done in accessible areas of northern Quebec. In the near future, this forest potential will be fully managed to meet the ever-increasing need for wood products. Private forests account for about 10 p.c. of the total and for about one quarter of the annual cut.

Public forest management is the responsibility of the Woods and Forests Branch of the Quebec Department of Lands and Forests, and includes management, control and supervision. Under certain circumstances when the interest of a group so requires, the Department may engage in the management of private forests. The Woods and Forests Branch is also involved, both directly and through various organizations, in forest fire protection and insect and disease control. Nurseries are operated throughout the province to supply plants necessary for restocking areas where natural reproduction is inadequate. The present nursery stock totals about 70,000,000 seedlings.

Because Quebec's forests are of prime importance to the economy of the province and to that of Canada, the Department maintains continual revision of its forest policies in line with progress in all aspects of forestry, with a view to increasing this valuable capital asset and its returns.

Ontario.—The boundaries of Ontario enclose an area of 412,582 sq. miles—83 p.c. land and 17 p.c. water. Forest lands comprise 75 p.c. of total land, of which 164,600 sq. miles are classified as productive. The Crown owns 90 p.c. of the productive forest land. Although 84 tree species (exclusive of the hawthorns) occur within Ontario, four species (black spruce 29 p.c., poplar 19 p.c., jack pine 13 p.c., and white birch 11 p.c.) account for almost three quarters of the total volume of standing trees. The total volume of merchantable standing timber is estimated at 111,000,000 M cu. ft.—60 p.c. softwoods and 40 p.c. hardwoods.

Crown forests are administered and managed through the Department of Lands and Forests, which has 10 branches at Head Office and 21 forest districts (grouped within three regions). The Branches may be classified as service (Accounts, Law, Operations, Personnel, and Research) and operating (Fish and Wildlife, Forest Protection, Lands and Surveys, Parks and Timber). The list of operating Branches indicates that a multi-use concept of forests is practised but only the programs that foster the growth and use of timber as a crop are discussed here.

Management.—The original function of the Timber Branch was to arrange for the orderly sale of timber and this important function is still carried out along traditional lines—operators are granted a licence to cut specified timber for which they pay stumpage at contractual rates on the measurement (scale) of products removed. However, the details and techniques of utilization are undergoing constant improvement. Although Ontario's forest-based industries have long been a Canadian leader in terms of diversity of products and value of shipments, there is still a surplus of timber over actual cutting in the province. To ensure the continuing supply of timber of the type required by industry, an effective management policy has been conceived. Continuing forest inventories, using aerial photographic methods in which the province pioneered, provide an up-to-date record of the forest wealth, showing the species and other characteristics of stands and their geographical distribution. Inventory data are then applied to management planning; the province has been divided into 205 management units, each homogeneous with respect to forest and use patterns. Long-term plans set out regulations on the volume and location of cuttings and include programs for regeneration and tending that will sustain yields. As of 1968, 170 plans (78 Crown, 66 company, and 26 agreement forest) were completed for approximately 190,000 sq. miles.

The Timber Branch is also responsible for the regeneration, tending and improvement of the forests on Crown lands. It operates 10 forest tree nurseries (with supporting tree seed collection, treatment and storage plant) currently geared for an annual output of about 100,000,000 units by 1970-71.

While the Department, directly or indirectly, supervises all planting projects on Crown lands, regeneration agreements have been signed with all major licensees whereby they assume the direct responsibility for the conduct of planting projects, receiving payment at an agreed rate for work completed. Similarly, other projects, such as site preparation for the planting, may be performed by the companies under the same agreement.

During 1967, 39,500,000 nursery-produced trees were planted on about 58,500 acres of Crown lands. The tubed seedling program continued in 1967 and a total of 18,600,000 tubed seedlings were planted on approximately 17,000 acres. Other annual silvicultural treatments included the direct seeding of 10,000 acres, treatment for natural regeneration on 28,500 acres and stand improvement (cleaning, thinning, pruning, etc.) on 35,700 acres. In addition, Ontario's first aerial application of fertilizers for forestry purposes took place in June 1967. Nitrogen, in urea form, was applied on a small scale in the Sault Ste. Marie District. In all, 150,000 acres were silviculturally treated in 1967 to promote regeneration or to improve the forests.

For half a century, Ontario has had enabling legislation that permits municipalities and conservation authorities to place abandoned and submarginal agricultural lands, to which they have acquired title, under agreement with the Department of Lands and Forests, which undertakes to plant and manage the properties for a specified period of time—usually 50 years. Nearly 220,000 acres currently under such agreements have been managed intensively, the plantations receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, the properties that are close to centres of population are acquiring tremendous value as recreational areas.

Owners of private land may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. Under the Woodlands Improvement Act, 1966, it is possible to have planting and improvement work carried out completely under government direction and mainly at its expense. In return, the owner is required to meet a few modest demands that ensure his good faith. This program has, in three years, planted nearly 10,000 acres of idle land, and updated forest management on 16,000 acres of privately owned land.

In Ontario, the utilization of timber crops, the processing of forest products and the distribution of commodities of wood to markets are functions of private enterprise. Pri-

mary mills licensed in 1966 and supplied principally from provincial forests include 26 pulp and paper mills, 28 veneer and plywood mills and 890 sawmills of all types. Although the consumption trend for wood is upward, the costs of wood at the mills have also been increasing and this has led to increased mechanization and, in turn, to entirely new technologies of logging and product transfers. These changes have put pressure on the traditional methods of wood measurement, and the Department has adopted or is further testing alternative practices including (1) tree-length scaling, (2) weight scaling, (3) sample scaling, (4) measurement of log diameters to the full inch, and (5) log grading. In addition, the data and the invoicing of licensees are being computerized.

Certain parts of the Crown forests remain under-developed. For such areas, the Economics Unit has undertaken feasibility studies and has had a principal role in getting new firms to establish. Other functions of the Unit include co-operation in expanding the available statistical information for the forestry sector, development of economic guides for timber management, analysis of current manufacturing costs and market prices, evaluation of the impact of policy decision and economic service to other Branches.

Protection.—The area under organized forest protection in Ontario totals 180,275 sq. miles and includes the main central band of accessible forests. This area is organized into 20 fire districts and further subdivided into 54 chief ranger divisions for the purpose of forest protection. South of this area, in the highly developed agricultural counties of southern Ontario, the municipalities are responsible for fire control. The vast inaccessible areas to the north of the fire districts, totalling over 134,000 sq. miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the fire districts, agreements were in effect in 1968 with 216 municipalities and 250 timber licensees for the prevention and control of forest fires. An agreement was also in effect with the Federal Government for the protection by the Ontario Department of Lands and Forests of 958,000 acres of Indian lands in the province. The average annual number of fires for the 1959-68 period was 1,435 and the average annual burn was 142,674 acres.

Forest fire detection is accomplished through a combined lookout tower and aerial patrol system as well as reports from the public. During 1968, chemical drop tests were conducted with Twin Otter, Turbo Beaver and Canso aircraft to determine chemical concentration and drop pattern relationships. Prescribed burning for hazard reduction and site preparation purposes was carried out on 28 burns covering 4,235 acres.

The new water-bombing system, utilizing the interior of aircraft floats to carry the water load was applied on 147 fires. The aircraft fleet as of Jan. 1, 1969 consisted of 28 Turbo Beavers, 10 Otters, two Twin Otters and one Super Widgeon; five helicopters were leased during the fire season. The communications system included 339 ground stations, 277 lookout tower radios, 15 patrol vessel radiotelephones, 618 mobile radiotelephones, 1,344 portable fireline radios, 41 aircraft radio installations and 60 portable aircraft radiotelephones.

Forest pest control in 1968 was highlighted by the spruce budworm spraying in northwestern Ontario, where 275,000 acres were treated. Small acreages on Crown-owned and Crown-managed areas were also treated in 1968 for white pine weevil, European pine sawfly, white pine blister rust and fomes root rot.

Manitoba.—The administration of Manitoba forests is controlled by the Forestry Branch of the Department of Mines and Natural Resources. The Province is divided into four regions, each under a Regional Director who is responsible for the field administration of forests in his region. The Regional Director works under policy guidelines established by the Forestry Branch, relating to timber disposal reforestation and fire protection.

The Forestry Branch co-ordinates control measures for the propagation, improvement and management of the forests, the harvest of forest products, and forest inventory surveys. A nursery station is maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for shelterbelts and woodlots and to commercial Christmas tree producers and an average of more than 4,000,000 are planted each year in reforestation projects on Crown lands. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and encourage growth of preferred trees. Forest inventories cover about 5,500 sq. miles annually and, on the basis of these inventories, working plans with annual allowable cuts on a management unit basis have been brought into operation.

Timber-cutting rights are awarded by Forest Management Licences, Timber Sales and, in certain cases (particularly for salvage operations), by Timber Permits. Forest Management Licences may be granted for periods of up to 20 years and are renewable; Timber Sales may be for varying periods from one year upward and Timber Permits for periods of up to one year. At present, one long-term Pulpwood Berth with an area of 2,745 sq. miles and 10 long-term Timber Berths, all granted prior to 1930, are in force. A second Pulpwood Berth agreement was signed early in 1966, covering the construction of a pulp mill and sawmill at The Pas in northern Manitoba.

The area of the province under forest fire protection is 128,370 sq. miles with zones of priority established in the less accessible areas. Fires are detected through a comprehensive network of lookout towers and supporting air and ground patrols, all tied together by radio and Departmental or public telephones. Two Canso water-bombers and two helicopters are rented for the worst of the fire season to supplement the nine aircraft of the Manitoba Government Air Service.

Manitoba co-operates with several federal services which maintain two research areas in the province, and works closely with federal authorities in investigating and controlling forest damage resulting from insects and diseases. Public education in the fields of fire prevention and forest conservation is carried out and use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, etc.

Saskatchewan.—The forests of Saskatchewan are located mainly in the northern half of the province and cover 117,738 sq. miles, or 53 p.c. of the total land area. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of four divisions—Fire Control, Forest Management, Inventory and Silviculture—is responsible for developing and evaluating forest policies and management programs. The responsibility for carrying out such policies and programs is borne by the various regional administrative authorities. For purposes of resource administration, the province, with the exception of the most northern portion, is divided into three regions, each under the supervision of a regional superintendent. The regions are subdivided into conservation officer districts which vary in size according to resource base and population to be served. In the most northerly part of the province, because of various special programs with northern residents, resource administration is the responsibility of the Northern Affairs Branch of the same Department. Close liaison is maintained between the Forestry Branch and the various regional authorities.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 74 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by four aircraft on regular patrol duty during the high-hazard periods. Northern Saskatchewan's communication system, with more than 1,300 two-way radio sets in

operation in towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppression of forest fires. These activities are assisted by the use of three helicopters and seven aircraft equipped for water dropping.

Alberta.—The 157,595 sq. miles of provincial forest in Alberta are administered by the Alberta Forest Service of the Department of Lands and Forests at Edmonton. The Service, headed by the Director of Forestry, is composed of five Branches—Administration, Forest Protection, Forest Management, Forest Surveys and Planning, and Forestry Training. For ease of administration the forest area is divided into 11 Forests, each responsible for the forest within its boundaries. These Forests are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his superintendent. Each Forest staff includes: forest superintendent, fire control officer and assistant, forester, mechanical foreman, carpenter foreman, equipment operators, scalers, land-use officers, radio operators, clerks, stenographers, and seasonal help such as standby fire crews, lookout men, general labourers and construction crews. Some Forests employ minimum security crews on management, protection and construction projects.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, maintains the equipment inventory and deals with personnel.

The Forest Protection Branch has charge of all phases of protection including prevention, detection, suppression and use of forest and prairie fires. The Branch also plans, supervises and executes the construction and maintenance of the road and building programs and supervises the radio communication facilities.

The functions of the Forest Management Branch include the acceptance and approval of management and annual operating plans prepared for leased and licensed Crown lands, implementation of management plans prepared by the Department, supervision of proper land-use practices and the disposal of Crown timber. This extends to all phases including processing of timber applications, selection of timber to be sold, cruising of merchantable timber, inspection of cutting areas to ensure proper logging and utilization practices, scaling of forest products, collection of dues and fees and reforestation programs for areas denuded by cutting and fire. It is also responsible for the implementation and supervision of the timber quota system.

The Forest Surveys and Planning Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; develops and supervises recreational area plans; provides regulation of geophysical activities in the forest area; and provides technical drafting and mapping services.

The Forestry Training Branch prepares training material and conducts training programs for Departmental personnel and other persons concerned with activities of fire control, forest management, forest protection and conservation. It also provides the facilities and instruction for the second year of a two-year forest technology course provided by the Northern Alberta Institute of Technology, and supervises the Provincial Junior Forest Ranger Program.

One Forest and part of two others are included in the Rocky Mountains Forest Reserve. This area is administered by the Alberta Forest Service but decisions of the Director of Forestry are based on policies of wise watershed regulation formed by the Eastern Rockies Forest Conservation Board. The Board comprises one federal and two provincial members. This reserve includes part of the headwaters of the main Prairie Provinces river system. Research in general is carried out by the federal Department of Forestry and Rural Development, which maintains the Kananaskis Experiment Station.

British Columbia.—The productive forest land of British Columbia is inventoried (1958) at 208,411 sq. miles with an additional 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurs on 95,739 sq. miles;

84,275 sq. miles carry mature timber estimated at 251,000,000 M cu. ft.; and 28,397 sq. miles are unclassified, including areas of burn, cut-over or windfall not yet re-stocked.

For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision into Ranger Districts, of which there are approximately 25 in each Forest District. Twelve directional, servicing or policy-forming Divisions constitute the Head Office of the Forest Service at Victoria.

Efforts continue to bring British Columbia's forest resources under sustained-yield management and the forest industries are making progress toward more complete utilization of their raw materials. The problem is urgent despite the fact that, with a present annual scale of approximately 1,573,000 M cu. ft., the total inventory would appear sufficient to support current needs in perpetuity. One of the more spectacular results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province. The over-cut coast (wet belt) forests now account for about 57 p.c. of the total forest cut each year and the interior for 43 p.c. For all practical purposes, the entire interior forest is publicly owned; the great majority of privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence, which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land for the best possible return, in exchange for the right to the timber crop on the area. Tree Farm Licences are subject to re-examination for renewal every 21 years. Provincial Forests, Pulp Harvesting Forests and Public Sustained-Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Of major interest is the Pulpwood Harvesting Area plan, unique in North America, which calls for the integration of a 'sawlog' economy with a new pulp industry; five of these Areas have now been established—three in Prince George Forest District, one in Prince Rupert Forest District and one in Kamloops Forest District. Management, silviculture, roadbuilding and protection on such Areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and those Timber Sales issued outside 'regulated' areas.

Forest fire prevention techniques and organization for effective forest fire suppression are vital aspects of planned sustained-yield management. A greatly expanded pulp industry, added to the long-established logging and sawmill industries, has increased the necessity for more adequate fire control. Extensive use is made of aircraft under various terms of contract. Air tankers and fire-spotter aircraft are employed during the fire season and helicopters and other aircraft are employed under contract for patrol duties and for the transport of fire suppression crews. The rugged topography and the many remote and sparsely populated areas of the province demand the availability of a variety of transportation methods to tie in with fast discovery of and early attack on forest fires.

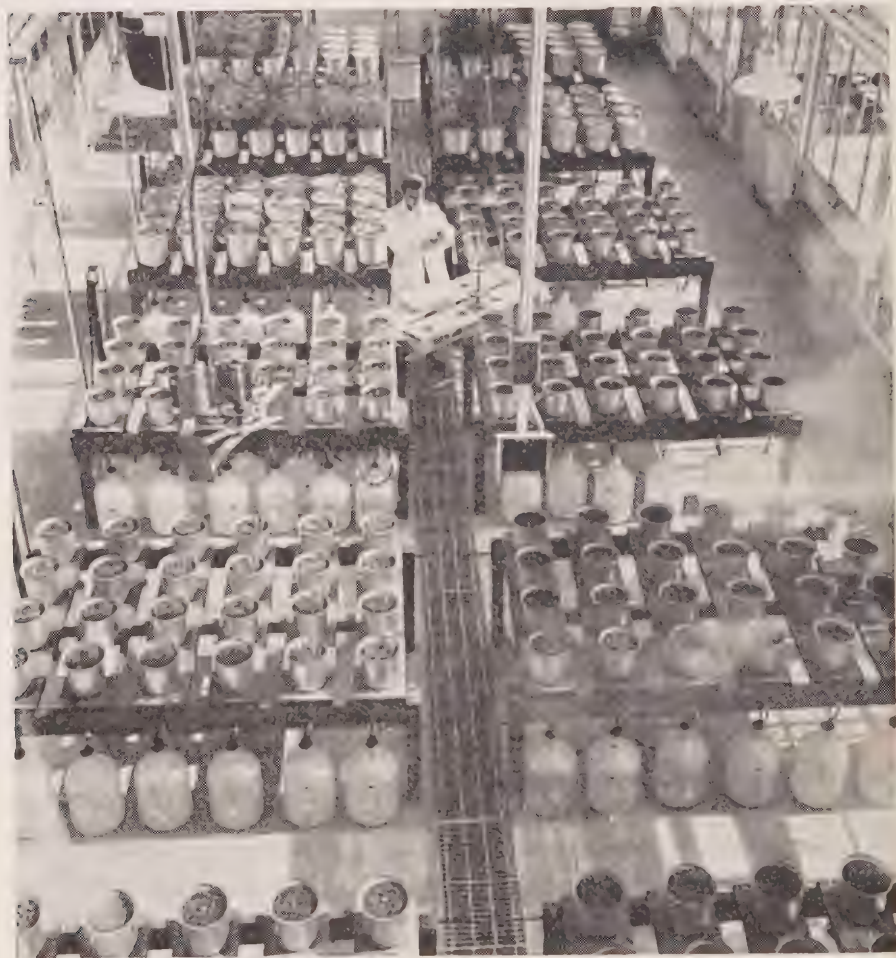
Close liaison with the Forestry Branch of the federal Department of Fisheries and Forestry through facilities at Victoria and Vernon provides detailed information on insect and fungal enemies of the forest and on fire research.

Subsection 3.—The Pulp and Paper Research Institute of Canada

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodland operations and pulp and paper mill operations. In addition, in co-operation with McGill University,

it trains postgraduate students who are working toward master's and doctorate degrees in physical chemistry, wood chemistry, or chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute's head office and main laboratories are located in Pointe Claire on the western outskirts of Montreal in a recently enlarged building constructed by the Government of Canada. Space provided by the University is also occupied on the campus of McGill University by Institute staff and students involved in the graduate education program. The Institute's facilities include: organic and physical chemistry, physics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and



Greenhouse and field studies are carried out by the Pulp and Paper Research Institute of Canada to determine the most suitable fertilizer prescriptions for particular forest areas. Correcting nutritional deficiencies by fertilizer, possibly applied by aircraft every five to ten years, can increase the yield of wood per acre.

waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp and paper. It has a staff of about 195.

The Institute's research activities comprise a basic program in pulp and paper research and in woodlands research, contract research, and technical services. The basic pulp and paper research program is supported by assessments from the Maintaining Membership (some 40 companies, representing more than 100 mills and about 95 p.c. of the total production of the Canadian industry) and by a grant from the Canadian Pulp and Paper Association. The woodlands research program is supported by assessments on all member companies of the Canadian Pulp and Paper Association east of the Rockies that use pulpwood and by a grant from the Association. Both programs comprise research of interest to the industry broadly, as distinct from that which is the concern of a single company only.

The projects in the basic programs range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into seven broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control, product quality and waste utilization. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles and for major engineering research and development projects which individual pulp and paper companies would find difficult to justify if the costs were not shared. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 40 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The Head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin and hemicelluloses. The Head of the Institute's Physical Chemistry Division, also a Professor in the McGill Chemistry Department, supervises graduate student work in polymer, surface and colloid chemistry with particular reference to those aspects that pertain to the physics and chemistry of pulp and paper. An Associate Professor of Chemical Engineering at McGill, who is a consultant to the Institute, directs graduate students in a variety of chemical studies. In addition, the Head of the Institute's Wood and Fibre Research Department, who holds a teaching appointment in McGill's Department of Mechanical Engineering, supervises graduate student investigations on such subjects as supercalendering of paper and frictional processes in polymeric systems. Other staff members who hold concurrent honorary positions at McGill as Research Associates assist in this student program.

The Institute also undertakes contract research projects on a cost-reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment and the study of the rapid deterioration of paper machine wires.

A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which stocks bibliographies, abstracts, translations and critical reviews for the use of the scientific staff and the industry.

CHAPTER XIII.—FISHERIES AND FURS

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.*

PART I.—FISHERIES*

Section 1.—Fisheries Resources of Canada

Fishing is Canada's oldest primary industry. The fishery on the Atlantic Coast has been well documented from the early 16th century when fishermen from Portugal, the Basque country of Spain, Normandy and Brittany in France, and Devonshire in England were taking fish from the rich fishing banks off Newfoundland. On the other hand, there is little in authentic records concerning Pacific Coast fishing prior to the arrival of England's intrepid Captain James Cook in 1778. That famous navigator chronicled that the Pacific Coast off present-day British Columbia abounded with fish and other species of marine animals such as sea otters, whales and seals.

Even though the relative importance of commercial fishing to the national economy has, of course, diminished greatly within the past century, the industry has undergone spectacular expansion and is still of paramount consequence to the coastal provinces and to inland areas adjacent to waters where commercial fishing is pursued.

Canada's main fishing effort is centred in the northwest Atlantic and the northeast Pacific waters, within range of home ports. Adding to the total production is a fairly large inland fishery based on the country's extensive bodies of fresh water. The Great Lakes which have an area of about 61,000 sq. miles yield a number of species, including whitefish, lake trout, pickerel, sauger, northern pike, yellow perch, white bass, sturgeon, smelt, carp and various species of chub. The 300 fishing lakes lying in an area of about 35,000 sq. miles in the Prairie Provinces yield rich harvests of whitefish, lake trout, pickerel, pike and other species and the 10,000-sq. mile Great Slave Lake as well as smaller lakes in the Northwest Territories also produce quantities of lake trout and whitefish.

* Sections 1 and 2, and part of Subsection 1 of Section 4 were prepared by the Information and Consumer Service of the Fisheries Branch, Department of Fisheries and Forestry, Ottawa.

A stern trawler operating out of Nova Scotia trails a huge net in its wake. This type of vessel, equipped with the latest in electronic hardware for finding fish and for navigation, operates efficiently in heavy seas and has brought in as much as 390,000 lb., mostly cod, on one ten-day trip.



More than 150 species of fish and shellfish are harvested by Canadian fishermen. The most important species of the sea fisheries include groundfish, such as cod, haddock, pollock, hake, etc., herring, halibut, salmon and lobsters. More than \$200,000,000 is represented in fishing boats and catching gear and investment in shore facilities is also well over \$100,000,000. A work force of about 80,000 persons is employed in fishing operations and of these about 30,000 depend solely on the catching of fish for their livelihood and 20,000 are employed in processing plants.

The northwest Atlantic fishing grounds are the richest in the world. The offshore banks cover about 200,000 sq. miles and are exploited by the fishing fleets of more than a dozen nations. Intensity of fishing effort by all fishing fleets is reflected by an almost spectacular increase in total catch. For instance, between 1954 and 1966 the over-all yield rose from 1,847,000 tons to 3,189,000 tons and Canada's catch alone increased from 634,000 tons to 974,000 tons.

The groundfish harvest in the Atlantic by Canadian vessels and those of other nations is immense. Other important species yielded by this vast fishing area include halibut and other flat fishes, herring, mackerel, turbot, hake, cusk, pollock, salmon, swordfish and tuna. Crustacea include lobsters and crabs, while scallops comprise the bulk of molluscs landings. Oysters and clams are harvested in inshore waters.

Salmon, halibut and herring are the principal species harvested in the Pacific Coast fisheries although a variety of other fish and shellfish are also taken. The catches of the five Pacific salmon—sockeye, chinook, coho, chum and pink—are regulated for conservation purposes, and extensive biological and engineering facilities are maintained in order to safeguard and develop these important stocks. Halibut, which are fished in the Gulf of Alaska and the Bering Sea, are also closely protected by regulations to maintain stocks at optimum levels. Herring are plentiful and are landed in quantity for reduction into fish meal and oil.

Section 2.—Commercial Fishing and Marketing, 1967

The history of Canadian sea fisheries during the past decade has been one of accelerating growth but in 1967 there was a setback from the record level of landings in 1966 of 2,600,000,000 lb. to 2,351,000,000 lb. because of marketing and production problems; earnings to fishermen amounted to \$149,600,000, a figure of \$11,500,000 below that of 1966. There was no significant change in the freshwater fisheries from 1966. They yielded about 50,000,000 lb. of various species, and brought the fishermen nearly \$19,000,000.

The results of the sea fisheries were better in some areas but these improvements were offset by declines in others. For instance, higher landings of herring on the Atlantic Coast were barely enough to compensate for a large decrease in Pacific herring catches. Herring catches on both coasts accounted for about a third of the volume of all Canadian fisheries in 1967.

Difficulties in marketing presented the most serious problems in the Atlantic fisheries for groundfish and the reduction industry. Total landings increased by 136,000,000 lb. over 1966 and surpassed the 2,000,000,000-mark for the first time, largely because of larger herring catches, but fishermen's earnings were only slightly above the 1966 record of \$100,000,000.

Despite the addition of new and larger vessels, the volume of groundfish landed was 1,135,000,000 lb. about 68,000,000 lb. less than in 1966. The decline was particularly evident in the landings by large trawlers (70 feet or over) which were down by 40,000,000 lb. or 7.4 p.c. The situation is largely explained by poor market prices which curtailed fishing for some species, scarcity of resources on the grounds and a shortage of crew members for side-trawlers. Weak market conditions continued during the year for groundfish fillets and blocks although the market strengthened slightly at the end of the year. As a result, prices to fishermen for groundfish were somewhat lower than in 1966 and the value to fishermen declined by about 8 p.c. from \$51,400,000 to \$47,100,000.

The only major fishery that experienced an increase in 1967 on the Atlantic Coast was the herring fishery. The expansion which began a few years ago continued during the year; 763,000,000 lb. valued to fishermen at \$8,200,000 were landed, an increase of nearly 40 p.c. in volume and of 32 p.c. in value. Of the quantity landed, approximately 500,000,000 lb., or 65 p.c., were used for reduction compared with 260,000,000 lb. or 48 p.c. in 1966. The increase in landings was particularly large in Nova Scotia and Newfoundland.

Lobster landings at 35,000,000 lb. were down by about 6 p.c. due mainly to a late start because of ice and weather conditions in some areas of Newfoundland and a poor catch in Northumberland Strait. The value of the catch, however, at \$23,300,000, was up 6 p.c. as higher prices more than compensated for the lower catch.

Canada's Pacific Coast landings dropped sharply from 575,000,000 lb. in 1966 to 320,000,000 lb. in 1967 and the value dropped to \$49,000,000 from the record high of \$60,600,000 in 1966. Despite this drop, however, the 1967 landed value exceeded the 1961-65 average.

The salmon catch in 1967 declined 18 p.c. from 162,000,000 lb. to 133,000,000 lb. but because of the large percentage of higher priced sockeye taken the landed value of all salmon totalled \$36,000,000, only 7 p.c. below the record of 1966.

Landings of halibut by Canadian fishermen at United States ports on the Pacific Coast totalled 26,000,000 lb., nearly 6,000,000 lb. less than in 1966. This drop was mainly the result of jurisdictional labour disputes centred in the Prince Rupert area. The landing pattern of halibut also changed and landings in Vancouver nearly doubled from 5,500,000 lb. in 1966 to 10,600,000 lb. in 1967 while those at Prince Rupert dropped from 18,200,000 lb. to 9,000,000 lb. The landed price for halibut was down sharply from the high levels of 1966, the average reported being 25 cents compared with more than 35 cents in 1966.

Pacific herring landings for 1967 reached only 116,000,000 lb. valued at \$1,800,000, about one quarter of the average production of the past ten years. As a conservation measure, herring fishing for reduction purposes was closed in October for the remainder of

the year. This is the period of the year when most of the herring is caught on Canada's West Coast. After several years of increasing groundfish landings off British Columbia, the catch fell sharply in 1967, partly a result of market and production conditions, the jurisdictional labour dispute, and a strike that directly affected groundfish landings early in the year.

Fishery Exports.—Export of Canadian fisheries products during 1967 had an all-time record value of \$235,500,000—an increase of 7.5 p.c. over the previous record of \$219,100,000 set in 1966. Shipments went to 77 countries with dried salted groundfish and canned fish the most prominent export items. The value of over-all shipments of canned fish and shellfish reached \$42,900,000, compared with \$28,500,000 in 1966. Canada now stands in second place following Japan, among the world's leading fish exporters in terms of value.

The Canadian fisheries industry faced a precarious position at the outset of 1967. Prices generally for most frozen fisheries products declined in the important United States market during the fall of 1966. However, over-all stocks of frozen fish and shellfish in both Canada and the United States tended to lessen during the first part of 1967 and prices to wholesalers in Boston, Massachusetts, notably for frozen cod blocks, eventually increased from a low of 19 or 20 cents a pound to 25 or 26 cents a pound during the late fall months. There was an air of cautious optimism in the industry that the trade had weathered possibly the most serious storm in the history of the fisheries.

An innovation in 1967 was the export of frozen pink salmon to European and other outlets. The restriction on exports of pink salmon in the frozen state, which had been implemented in 1948, was relaxed in August 1967, and a fairly large volume entered export trade. Although the over-all 1967 canned salmon pack was lower than in the previous year, the largest sockeye output since 1958 was processed, some 559,000 cases being packed in comparison with 407,000 cases in 1966.

1.—Canadian Exports of Fisheries Products, by Country, 1966 and 1967

Country	1966		1967	
	\$'000	p.c.	\$'000	p.c.
United States.....	150,647	68.7	145,029	61.6
Europe.....	41,536	19.0	60,939	25.9
Britain.....	21,384	9.8	32,755	13.9
Belgium and Luxembourg.....	2,452	1.1	4,093	1.7
France.....	6,250	2.9	6,826	2.9
West Germany.....	1,712	0.8	2,024	0.9
Italy.....	1,083	0.5	1,683	0.7
Netherlands.....	1,841	0.8	2,709	1.2
Portugal.....	680	0.3	3,383	1.4
Spain.....	887	0.4	1,265	0.6
Other.....	5,247	2.4	6,201	2.6
Caribbean Countries.....	20,003	9.1	19,963	8.5
Jamaica.....	7,420	3.4	7,951	3.4
Trinidad and Tobago.....	1,719	0.8	2,039	0.9
Leeward and Windward Islands.....	1,572	0.7	1,343	0.6
Barbados.....	657	0.3	792	0.3
Guyana.....	975	0.4	1,196	0.5
Puerto Rico.....	3,340	1.5	3,310	1.4
Dominican Republic.....	2,556	1.2	1,534	0.7
Haiti.....	499	0.2	400	0.2
Panama.....	202	0.1	66	--
Other.....	1,063	0.5	1,332	0.5
All Other Countries.....	9,533	3.2	9,514	4.0
Australia.....	2,232	1.0	3,541	1.5
New Zealand.....	1,032	0.5	813	0.3
Brazil.....	266	0.1	158	0.1
Other.....	6,003	1.6	5,002	2.1
Totals, All Areas.....	221,719	100.0	235,445	100.0

2.—Canadian Exports of Fisheries Products, by Forms, 1966 and 1967

Form	1966	1967
	\$'000,000	\$'000,000
Fresh or Frozen.....	149.37	146.32
Whole or dressed.....	48.43	46.58
Fillets.....	69.07	65.95
Shellfish (in shell and meat).....	31.82	33.79
Cured.....	23.94	27.61
Smoked.....	2.43	2.11
Bloaters and kippers.....	1.44	0.95
All other.....	0.99	1.18
Salted and dried.....	18.37	22.57
Cod.....	15.77	20.16
All other.....	2.60	2.41
Pickled.....	3.14	2.93
Herring.....	1.92	1.83
All other.....	1.22	1.10
Canned Fish and Shellfish.....	28.51	42.91
Salmon.....	18.62	33.31
Sardines.....	5.50	6.19
Lobster.....	2.59	1.94
All other.....	1.80	1.47
Miscellaneous.....	19.89	18.60
Meal.....	9.42	7.86
Oil.....	0.80	1.61
All other.....	9.67	9.13
All Fish Products.....	221.72	235.44

The trade welcomed the progress made in the Kennedy Round of GATT negotiations in eliminating duties on numerous fisheries products in the United States as well as reducing tariffs on a significant number of fisheries items in both the United States and Europe. This was tempered by the devaluation of currencies in several traditional markets for fisheries products including Britain and countries in the Caribbean area.

The United States has always been the main outlet for the products of the Canadian fishing industry. However, in 1967 exports to that country dropped to \$145,029,000 from \$150,647,000 in the previous year and the proportion of exports moving to that market dropped to 61.6 p.c. from 68.7 p.c. in the same comparison. On the other hand, exports to Britain were up from \$21,384,000 to \$32,755,000 and those to the other European countries importing Canadian fish and fish products were also higher, Portugal showing the greatest percentage increase. The five most important markets—United States, Britain, Jamaica, France, and Belgium and Luxembourg—together took 83.5 p.c. of the total Canadian exports, the remaining 16.5 p.c. going to many countries in all parts of the world.

About 62 p.c. of total exports, by value, are in the form of fresh and frozen fish and shellfish, of which the major portion goes to the United States. There was a \$3,000,000 decrease in the exports of this form in 1967 mainly because of a lower demand in the United States; exports to Britain moved up slightly. Atlantic and Pacific frozen salmon was in demand in 1967. Shipments of frozen coho salmon amounting to 9,700,000 lb. worth \$7,200,000 went to 21 countries with France, Britain, Belgium, the United States and the Netherlands the major outlets. The United States, France and Britain also purchased significant quantities of frozen spring salmon, sales of which were up considerably, reaching 84,000,000 lb. worth \$6,800,000.

The Canadian output of canned salmon in 1967 was 1,466,288 cases compared with 1,820,456 cases in 1966 but, perhaps because the pack of salmon in the United States was down drastically in that year and was also understood to be small in Japan and Russia, Canadian exports in 1967 reached 43,500,000 lb. valued at \$33,300,000 compared with 25,500,000 lb. valued at \$18,600,000 in 1966. The principal market for Canadian canned salmon was Britain although there were a number of other important outlets including Belgium, Australia, the Netherlands, France, Italy, Ireland, New Zealand, South Africa, etc.

The market position for salt fish was firm in the first part of 1967. There was no excessive carryover of stocks on the markets or in the fish producing countries. However, this situation changed in the late fall because of the devaluation of currencies in some of the leading markets, including Jamaica, and in such producing countries as Ireland, Spain and Denmark. Shipments of Canadian hard, dried, light salted cod and heavy salted cod were higher in 1967, amounting to some 51,400,000 lb. worth \$14,400,000 compared with the 1966 shipments of 41,700,000 lb. valued at \$10,600,000. The major markets for salt fish continued to be Jamaica, Portugal, Puerto Rico, Spain and Italy. Of considerable interest was the purchase of wet salt cod for further processing by West Germany (2,900,000 lb.), Portugal (1,900,000 lb.) and Norway (1,200,000 lb.).

Shipments of lobster in the shell, fresh or frozen, during 1967 were valued at \$15,300,000 as against \$15,200,000 in the previous year. The United States was the major market but the increasing demand accounted for important quantities being exported to France, Belgium, the Netherlands and West Germany. Shipments of lobster meat, fresh or frozen, went mainly to the United States although Britain purchased a considerable amount. Exports of canned lobster were worth \$1,900,000, down from the 1966 returns of \$2,600,000 mainly because of reduced landings. The United States, Britain, West Germany, Sweden and Belgium were the principal outlets.

Exports of herring meal from both coasts amounted to 74,700,000 lb. worth \$5,900,000 compared with 73,400,000 lb. valued at \$6,900,000 in 1966. The United States and Britain were the only export markets indicated, the bulk going to the former.

Canadian exporters of fisheries products are kept informed of world demand and production, based on periodic reports received from Canadian Trade Commissioners around the globe. On-the-spot studies of leading outlets have been completed by officers of the Fisheries Division of the Department of Industry, Trade and Commerce. As a special service to the industry, that Department, in co-operation with the federal Department of Fisheries and Forestry and the Fisheries Council of Canada, which is an industry group representing most of the fishery product producers across the country, has sent fisheries missions to all of the leading fish producing and consuming countries of the world during the past several years.

Section 3.—Fishery Statistics

The review of commercial fishing and marketing given in the preceding Section covers the situation in 1967 and contains estimated figures for that year. At the time of the preparation of this Chapter, however, the latest statistics available in detail for both the primary production and fish products were those for 1966 contained in the following Subsections.

Subsection 1.—Primary Production

The value of the 1966 catch of seafish on the Atlantic Coast was at a very high level; it amounted to \$96,308,000, an increase of 1.4 p.c. over the 1965 value of \$94,988,000 and 11.6 p.c. over the five-year 1962-66 average of \$83,226,000. The cod catch at \$25,099,000 was the most valuable and lobster was second at \$22,038,000.

For the sixth consecutive year, the value of the Newfoundland catch was substantially higher than that of the previous year. The value of landings of all species was \$25,886,000 of which cod accounted for \$14,590,000. Cod landings at 34,540,000 lb. were lighter than in 1965 as were those of haddock, but landings of redfish, turbot (Greenland halibut), plaice and greyscale were again considerably increased.

The value of fish and shellfish landings by Nova Scotia fishermen in 1966 at \$46,738,000 was down slightly from the 1965 record of \$48,194,000. Lobster and scallops continued to be the most important species from the standpoint of income to the fishermen having a landed value of \$10,467,000 and \$7,290,000, respectively. Haddock was third at \$7,286,000 followed by cod, flounder and sole, swordfish, pollock and halibut.

New Brunswick fishermen also landed a more valuable catch in 1966 than in 1965. Lobster, herring and cod were the major sources of income to the fishermen, accounting for \$7,293,000 of the total value of \$11,136,000. The herring catch, which has been increasing steadily from a low of 56,269,000 lb. in 1961, reached 242,600,000 lb. in 1966 compared with the five-year 1962-66 average of 163,078,000 lb.

Returns to Prince Edward Island fishermen in 1966 of \$5,998,000 were below the 1965 level. Lobsters, at \$3,926,000, made up 65 p.c. of the total and cod at \$535,000 was next in importance.

The value of all Quebec landings increased to \$7,278,000 from \$6,938,000 in 1965 as a result of increased landings of redfish, lobster and plaice.

The value of British Columbia landings in 1966 was \$60,659,000, and all-time high, up considerably over the five-year 1962-66 average of \$49,236,000. Annual fluctuations in the volume of salmon taken, which make up over half of the total landings, materially affect the total value of the catch. Salmon landings in 1966 were 162,852,000 lb. valued at \$38,654,000 compared with 90,190,000 lb. valued at \$25,958,000 in the previous season. The 1966 catch of tuna at 587,000 lb. was a record catch.

3.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1962-66

NOTE.—Figures for the years 1918-60 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

Province or Territory	1962	1963	1964	1965	1966
QUANTITY					
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	549,341	594,961	583,381	616,661	679,787
Prince Edward Island.....	37,630	38,464	41,015	46,241	53,171
Nova Scotia.....	435,903	427,127	514,703	592,350	706,344
New Brunswick.....	204,511	234,888	254,027	296,441	350,129
Quebec.....	133,443	132,773	133,733	145,176	146,609
Ontario.....	63,780	54,342	43,508	52,486	56,344
Manitoba.....	36,105	35,738	28,636	29,588	29,983
Saskatchewan.....	14,999	14,089	14,306	14,933	14,027
Alberta.....	9,025	8,509	12,751	8,514	10,907
British Columbia.....	686,918 ¹	772,859 ¹	712,613	626,161	574,920
Yukon and Northwest Territories ²	6,544	6,347	6,052	5,670	4,362
Totals.....	2,178,199	2,320,097	2,344,725	2,434,221	2,631,533
Sea Fish.....	2,041,168	2,196,270	2,234,553	2,314,775	2,509,923
Inland Fish.....	137,031	123,827	110,172	119,446	121,610
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	17,222	20,086	21,978	23,176	25,886
Prince Edward Island.....	4,361	4,462	5,642	6,825	5,998
Nova Scotia.....	30,928	35,145	40,977	48,194	46,738
New Brunswick.....	9,182	9,320	10,277	10,651	11,136
Quebec.....	5,534	5,879	5,894	6,938	7,278
Ontario.....	5,341	5,498	5,222	6,402	5,995
Manitoba.....	4,229	4,356	3,720	4,370	4,788
Saskatchewan.....	1,478	1,300	1,490	1,734	2,428
Alberta.....	714	676	799	677	844
British Columbia.....	49,067 ¹	40,466 ¹	48,296	47,435	60,659
Yukon and Northwest Territories ²	859	796	833	994	792
Totals.....	128,915	127,984	145,128	157,396	172,542
Sea Fish.....	115,570	114,687	132,413	142,424	156,966
Inland Fish.....	13,345	13,297	12,715	14,972	15,576

¹ Includes halibut landed in United States ports.
only.

² Prior to 1964 figures are for Northwest Territories

4.—Quantity and Value of the Chief Commercial Fish Landed, 1965 and 1966

Area and Species	Quantity Landed		Value Landed	
	1965	1966	1965	1966
	'000 lb.	'000 lb.	\$'000	\$'000
Atlantic Coast				
Groundfish	1,106,601	1,201,780	44,399	51,348
Catfish.....	4,425	4,585	142	154
Cod.....	575,446	563,078	23,637	25,099
Flounder and sole.....	203,091	224,157	6,497	7,764
Haddock.....	92,933	112,819	6,054	8,056
Hake.....	12,732	16,733	359	546
Halibut.....	4,473	4,595	1,492	1,721
Pollock.....	51,461	34,578	1,868	1,382
Redfish.....	130,370	183,079	3,419	5,083
Other.....	31,670	58,156	931	1,563
Pelagic and Estuarial	474,367	635,338	11,637	13,874
Alewives.....	12,163	8,192	203	146
Herring.....	405,757	569,893	4,256	6,217
Mackerel.....	24,496	25,735	801	900
Salmon.....	4,623	5,163	2,221	2,536
Smelts.....	4,379	4,398	297	349
Swordfish.....	7,805	7,403	3,253	3,214
Other.....	15,144	14,554	606	512
Molluscs and Crustaceans	86,223	76,436	38,556	30,637
Clams.....	3,967	4,636	231	260
Loysters.....	40,522	37,340	26,632	22,038
Oysters.....	3,487	3,520	532	559
Scallops.....	19,704	18,249	10,849	7,446
Other.....	18,543	12,691	312	334
Other¹	21,423	21,452	397	449
Totals, Atlantic Coast	1,688,614	1,935,006	94,988	96,308
Pacific Coast				
Groundfish	65,060	70,610	13,384	14,539
Cod (gray).....	19,223	20,707	1,142	1,436
Halibut ²	32,973	32,000	11,112	11,471
Ling cod.....	4,413	5,026	457	603
Sablefish.....	977	1,402	203	304
Flounder and sole.....	6,667	10,711	430	686
Other.....	807	764	40	39
Pelagic and Estuarial	542,295	482,974	32,487	44,283
Herring.....	444,061	307,652	6,232	5,107
Salmon.....	90,190	162,852	25,958	38,654
Chum.....	6,644	15,554	324	1,887
Coho.....	33,167	35,030	11,107	11,929
Pink.....	22,696	79,394	2,668	8,557
Sockeye.....	16,203	25,653	6,015	9,593
Spring.....	11,356	13,615	6,506	6,693
Other.....	134	306	33	85
Other.....	8,044	12,470	297	522
Molluscs and Crustaceans	18,726	21,153	1,558	1,820
Clams.....	2,097	2,473	106	125
Crabs.....	3,502	4,538	552	588
Oysters.....	11,301	12,416	612	802
Shrimps and prawns.....	1,755	1,682	281	300
Other.....	71	44	7	5
Other¹	80	183	6	17
Totals, Pacific Coast	626,161	574,920	47,435	60,659

For footnotes, see end of table, p. 564.

4.—Quantity and Value of the Chief Commercial Fish Landed, 1965 and 1966—concluded

Area and Species	Quantity Landed		Value Landed	
	1965	1966	1965	1966
	'000 lb.	'000 lb.	\$'000	\$'000
Inland				
Freshwater Fish	112,705	116,966	14,561	15,212
Bass.....	2,734	1,853	419	362
Catfish.....	1,162	693	199	141
Herring, lake (cisco).....	1,603	1,185	55	63
Perch.....	21,352	22,375	2,654	1,991
Pickereel (yellow).....	9,717	11,190	3,143	3,995
Pike.....	7,726	7,867	439	487
Saugers.....	4,109	4,833	1,303	1,461
Smelts.....	11,980	16,099	360	479
Sturgeon.....	340	311	225	197
Trout.....	3,176	2,948	553	539
Tullibee.....	8,542	10,893	625	579
Whitefish.....	24,236	20,510	3,896	3,507
Other.....	16,028	16,209	690	1,411
Other	6,742	4,644	411	364
Totals, Inland	119,447	121,610	14,972	15,576
Grand Totals	2,434,222	2,631,536	157,395	172,543

¹ Includes livers and scales.
fish caught inland.

² Includes landings by Canadian fishermen in United States ports.

³ Sea

5.—Persons Employed in the Primary Fishing Industry, by Province, 1964-66

Province or Territory	Sea Fisheries			Inland Fisheries		
	1964	1965	1966	1964	1965	1966
	No.	No.	No.	No.	No.	No.
Newfoundland.....	22,615	21,701	20,286	—	—	—
Prince Edward Island.....	3,329	3,566	3,220	—	—	—
Nova Scotia.....	13,333	14,049	13,067	—	—	—
New Brunswick.....	5,790	6,102	5,642	150	139	180
Quebec.....	3,512	3,917	3,703	781	747	728
Ontario.....	—	—	—	2,952	2,544	2,445
Manitoba.....	—	—	—	5,671	5,440	5,320
Saskatchewan.....	—	—	—	2,010	2,000	1,800
Alberta ¹	—	—	—	4,211	4,507	4,360
British Columbia.....	13,300	13,000	12,000	—	—	—
Yukon Territory.....	—	—	—	33	33	45
Northwest Territories.....	—	—	—	438	412	450
Totals	61,879	62,335	57,918	16,246	15,822	15,328

¹ Licences issued.

Subsection 2.—Fish Products

According to commodity surveys conducted by the Dominion Bureau of Statistics, the value of sea and inland fish products produced at all industrial levels, including the value to fishermen, amounted to \$355,590,000 in 1966; this was an increase of 13.7 p.c. over 1965 and the highest amount on record. Most of the increase over 1965 took place in the salmon fishery of British Columbia.

6.—Value of All Products of the Fisheries, by Province, 1962-66

NOTE.—Figures for the years 1917-61 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition.

Province or Territory	1962	1963	1964	1965	1966
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	38,883	43,794	44,935	51,340	58,473
Prince Edward Island.....	6,403	6,608	8,418	9,748	9,164
Nova Scotia.....	67,379	77,721	88,613	91,908	97,807
New Brunswick.....	33,088	33,424	32,249	46,255	45,268
Quebec.....	10,625	10,820	11,618	12,932	13,345
Ontario.....	6,009	6,192	5,875	7,202	6,744
Manitoba.....	7,979	7,563	6,855	7,331	7,082
Saskatchewan.....	3,115	2,711	3,082	3,222	4,858
Alberta.....	1,234	1,125	1,222	1,128	1,383
British Columbia and Yukon Territory ^{1,2}	100,057	80,114	97,977	89,898	123,715
Northwest Territories.....	1,231	1,330	1,215	1,411	1,225
Totals³.....	260,988	260,311	291,536	312,796	355,590
Saltwater products.....	240,694	240,719	272,602	291,581	333,535
Freshwater products.....	20,292	19,592	18,934	21,215	22,055

¹ Yukon not included prior to 1964.

² Includes landings by Canadian fishermen in United States ports.

³ Totals are lower than the sum of provincial totals because duplications resulting from intershipments between provinces are removed.

7.—Marketed Value of All Products of the Fisheries,¹ by Area and Species, 1964-66

Area and Species	1964	1965	1966
	\$'000	\$'000	\$'000
Atlantic Coast			
Groundfish.....	93,702	103,521	113,517
Catfish.....	318	329	605
Cod.....	46,084	50,038	49,554
Flounder and sole.....	12,104	17,100	18,643
Haddock.....	15,432	11,040	12,007
Hake.....	1,115	904	978
Halibut.....	1,836	1,907	1,613
Pollock.....	4,849	4,534	3,222
Redfish.....	4,869	8,309	11,788
Other.....	7,095	9,360	15,107
Pelagic and Estuarial.....	26,727	33,968	41,775
Alewives.....	269	285	186
Herring.....	5,136	9,603	16,933
Mackerel.....	1,618	1,861	2,098
Salmon.....	3,608	2,676	4,412
Sardines.....	7,415	11,553	12,458
Smelts.....	387	541	672
Swordfish.....	3,700	3,203	618
Other.....	4,594	4,246	4,498
Molluscs and Crustaceans.....	51,239	56,834	46,570
Clams.....	166	251	511
Lobsters.....	36,279	43,665	32,600
Oysters.....	594	827	926
Scallops.....	12,564	10,909	11,604
Other.....	1,636	1,182	929
Other.....	6,110	7,386	7,992
Totals, Atlantic Coast.....	177,778	201,709	209,854

¹ Includes value of livers and liver products.

**7.—Marketed Value of All Products of the Fisheries,¹ by Area and Species,
1964-66—concluded**

Area and Species	1964	1965	1966
	\$'000	\$'000	\$'000
Pacific Coast			
Groundfish	12,947	16,264	17,851
Cod (gray).....	1,187	1,853	1,837
Halibut ²	10,103	12,607	13,536
Ling cod.....	569	724	798
Sablefish.....	273	321	451
Flounder and sole.....	662	676	1,126
Other.....	153	83	103
Pelagic and Estuarial	75,259	64,415	98,713
Herring.....	11,562	11,750	8,305
Salmon.....	63,045	52,073	86,572
Chum.....	7,197	2,288	5,274
Coho.....	16,377	19,793	20,847
Pink.....	12,553	9,047	23,143
Sockeye.....	18,231	12,873	21,119
Spring.....	7,662	6,988	9,133
Other.....	1,025	1,134	2,056
Other.....	652	592	3,836
Molluscs and Crustaceans	2,642	2,758	3,437
Clams.....	190	295	383
Crabs.....	1,439	1,145	1,438
Oysters.....	650	706	964
Shrimps and prawns.....	312	595	641
Other.....	51	17	11
Other	7,094	6,435	3,680
Totals, Pacific Coast	97,942	89,872	123,681
Inland			
Freshwater Fish	18,262	20,390	21,144
Bass.....	349	499	12
Catfish.....	218	215	158
Herring, lake (cisco).....	71	62	71
Perch.....	2,070	3,063	2,287
Pickercel (yellow).....	4,353	4,577	5,272
Pike.....	1,042	1,025	1,051
Saugers.....	1,624	1,965	1,990
Sturgeon.....	242	242	213
Trout.....	850	910	865
Tullibee.....	1,066	846	780
Whitefish.....	5,624	5,876	5,563
Other.....	753	1,110	2,882
Other	672	825	911
Totals, Inland	18,934	21,215	22,055
Grand Totals	294,654	312,796	355,590

¹ Includes value of livers and liver products.
States ports.

² Includes landings by Canadian fishermen in United States ports.

The annual output of canned salmon fluctuates considerably with the extent of the catch, as is shown in Table 8. This product has traditionally been the most important of the industry, but the demand for Atlantic Coast frozen groundfish fillets and blocks has been rising so rapidly that the value of the Atlantic products has been in first place since 1963.

8.—Pacific Coast Production of Canned Salmon, 1964-66

Species	1964		1965		1966	
	Quantity	Value	Quantity	Value	Quantity	Value
	cases ¹	\$'000	cases ¹	\$'000	cases ¹	\$'000
Chum.....	232,722	5,010	65,216	1,562	160,784	3,880
Coho.....	204,732	8,179	295,284	11,673	281,623	11,545
Pink.....	464,107	12,142	287,926	8,499	951,784	27,273
Sockeye.....	343,358	18,088	245,798	12,792	409,200	20,941
Spring.....	9,127	224	18,892	511	14,585	412
Steelhead.....	1,262	34	844	25	2,480	75
Totals.....	1,255,308	43,677	913,960	35,062	1,820,456	64,126

¹ 48 lb.

9.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1964-66

Area and Species	1964		1965 ^a		1966	
	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb.	\$'000	'000 lb.	\$'000	'000 lb.	\$'000
Newfoundland.....	82,020	19,498	104,131	26,829	116,584	30,923
Cod.....	50,141	10,799	57,624	13,876	59,917	14,428
Haddock.....	3,217	907	1,802	550	1,187	395
Redfish.....	11,223	2,559	16,208	3,891	19,286	4,660
Flatfish.....	16,334	4,965	23,916	7,188	26,770	8,465
Other.....	1,105	268	4,581	1,384	9,474	2,975
Maritimes.....	93,867	24,658	102,848	29,301	106,352	30,514
Cod.....	30,663	7,250	38,352	10,661	32,745	8,378
Haddock.....	25,541	8,055	17,572	5,934	22,456	7,825
Redfish.....	4,418	1,086	7,654	2,029	14,990	3,854
Flatfish.....	16,844	5,359	20,851	6,706	23,342	7,671
Other.....	16,401	2,908	18,418	3,971	12,819	2,806
Quebec.....	16,794	3,461	20,073	4,636	23,339	5,327
Cod.....	10,121	2,043	10,327	2,494	9,051	2,088
Redfish.....	5,198	1,053	7,451	1,565	11,410	2,453
Flatfish.....	979	247	1,773	449	2,410	677
Other.....	496	118	522	128	468	109
Totals, Atlantic Coast.....	192,681	47,618	227,051	60,766	246,275	66,764
Cod.....	90,925	20,092	106,303	27,031	101,713	24,894
Haddock.....	28,758	8,962	19,374	6,484	23,643	8,220
Redfish.....	20,839	4,698	31,313	7,425	45,636	10,947
Flatfish.....	34,157	10,571	46,540	14,343	52,522	16,813
Other.....	18,002	3,295	23,521	5,483	22,761	5,890

Section 4.—Governments and the Fisheries

Under the British North America Act, the Federal Government has full legislative jurisdiction over the coastal and inland fisheries of Canada. The Federal Parliament therefore enacts all laws for the protection, conservation and development of the fisheries and responsibility for the administration and enforcement of these laws is vested in the

Fisheries Branch of the federal Department of Fisheries and Forestry. In some provinces, however, this administration has been delegated, by arrangement, to provincial agencies.

Specifically, the federal Fisheries Branch administers all tidal or sea fisheries except those of the Province of Quebec, and also administers the freshwater or non-tidal fisheries of the four Atlantic Provinces, the Yukon Territory and the Northwest Territories. The Provinces of Ontario, Manitoba, Alberta and Saskatchewan administer their own freshwater fisheries and in British Columbia the provincial government controls freshwater species but the Federal Government is responsible for marine and anadromous species. Administration of the fisheries of National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Indian Affairs and Northern Development.

Federal-Provincial Relations.—The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees established in recent years have brought together representatives of all governments concerned for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee consisting of representatives of the Federal Government and of the Governments of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec; the Federal-Provincial Committee for Ontario Fisheries; the Federal-Provincial Prairie Fisheries Committee comprising representatives of the Federal Government and of the Governments of Alberta, Manitoba and Saskatchewan; and the Federal-Provincial British Columbia Fisheries Committee.

Members of the Committees are the Deputy Minister of Fisheries of Canada and the Deputy Ministers of provincial departments responsible for fisheries. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests to the respective governments means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

Co-operation between the federal Fisheries Branch and the provinces has taken the form of cost-sharing arrangements on joint projects. Legislation enacted in 1966 grants to the federal Fisheries Branch further powers to enter into such agreements for purposes of modernizing, mechanizing and diversifying the nation's fisheries. The Fisheries Development Act, 1966 (SC 1966, c. 18) served to streamline the operations of the Department by incorporating several of the development activities undertaken under earlier legislation. It empowers the Minister of Fisheries (now Minister of Fisheries and Forestry) to undertake projects "(a) for the more efficient exploitation of fishery resources and for the exploration for and development of new fishery resources and new fisheries; (b) for the introduction and demonstration to fishermen of new types of fishing vessels and fishing equipment and of new fishing techniques; and (c) for the development of new fishery products and for the improvement of the handling, processing and distribution of fishery products". The Act authorizes federal cost-sharing agreements with provinces, with private companies and with individuals or co-operatives. Financial assistance may be given for the construction and equipment, or modification, of commercial cold storages and mechanically refrigerated bait-freezing facilities to be used for the preservation of fishery products, and for the construction and equipment of fishing vessels. The Act also authorizes the conduct of economic studies in conjunction with universities or other educational institutions and provides for the establishment of advisory committees to assist in the implementation of fisheries development programs.

Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries and Forestry:—

- (1) The Fisheries Branch of the federal Department of Fisheries and Forestry with headquarters at Ottawa, Ont., and regional offices under Regional Directors at Vancouver, B.C., Winnipeg, Man., Quebec, Que., Halifax, N.S., and St. John's, Nfld.
- (2) The Fisheries Research Board of Canada with headquarters at Ottawa and biological, technological and oceanographic stations across Canada.
- (3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of each of these agencies is given in this Subsection.

The Fisheries Branch of the Department of Fisheries and Forestry.—Canada's federal fisheries service began with Confederation in 1867 but it functioned as a branch of other departments until 1930, when legislation was enacted to establish a separate Department of Fisheries; in 1969 the Department became the Fisheries Branch of the Department of Fisheries and Forestry. The chief responsibilities of the Branch are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the maximum utilization of the fishery resources; and to develop a proper public understanding of the resources and the industry. Services rendered by the Branch have been revised and broadened with the times. It employs about 2,100 persons, most of them in conservation, protection, inspection and administration duties in fishing areas across the country. The Ottawa headquarters staff numbers about 240.

The Conservation and Protection Service, through a force of Fishery Officers stationed in fishing areas, on patrol aircraft and aboard a fleet of 80 patrol vessels, is concerned with the administration and enforcement of regulations for the conservation of fish stocks and the protection of fisheries.

The Resource Development Service is responsible for the application of technical and scientific means for the cultivation and development of fish stocks by improvement of the freshwater environment of anadromous species, principally salmon and trout, artificial propagation of fish and shellfish in hatcheries, spawning channels, etc., and control of parasites and predators, including the Great Lakes sea lamprey.

The maintenance of quality standards by regular inspection of fish, processing plants and fishery products is the responsibility of the Inspection Service. Additional functions undertaken in 1967 include investigation and extension work in fish handling, processing, storage and distribution. Inspection personnel, through active participation in the international Codex Alimentarius Commission, contribute to the development of world trading standards for fishery products.

The Information and Consumer Service is responsible for informing the fishing industry, fishermen and the general public on activities of the Department through the distribution of printed material, films and filmstrips, and radio and television material. The Consumer Branch of the Service promotes the consumption of fishery products.

The International Fisheries Service is concerned with international consultation and co-operation in fisheries and also with jurisdiction matters, particularly in reference to territorial waters and fishing zones.

The Director of Federal-Provincial Fisheries Arrangements is responsible for co-ordinating discussions with provinces. The Industrial Development Service undertakes a wide range of projects of technical aid and advice to fishermen and the fishing industry, and provides financial support to provinces and the industry for development purposes.

The Economics Service is responsible for the assembly, analysis and interpretation of statistical data on the fisheries, and the conduct of studies and investigations in the primary fisheries and the processing and distribution of fishery products.

Programs of economic aid to fishermen and industry, including the Fishermen's Indemnity Plan, the Newfoundland Bait Service and the Salt Assistance Plan, are administered by the Special Programs Service. The Indemnity Plan, to insure vessels, fixed gear, shore installations and lobster traps, applies in the Maritimes, Newfoundland, Quebec, British Columbia and Ontario.

International Fisheries.—Recognizing the necessity for the orderly regulation of fisheries in international waters, Canada has long been a leading participant in international conferences, conventions and treaties upholding conservation principles. The Fisheries Branch of the Department of Fisheries and Forestry assumes a major responsibility for the negotiation, revision and implementation of international fisheries treaties on behalf of the Government of Canada. The Branch is represented by one of its senior officers on each of seven international commissions established under the following conventions to which Canada is a party:—

- (1) the Convention between Canada and the United States for the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea;
- (2) the Convention between Canada and the United States for the protection, preservation and extension of the sockeye and pink salmon fisheries in the Fraser River system;
- (3) the International Convention for the High Seas Fisheries of the North Pacific Ocean between Canada, Japan and the United States;
- (4) the Interim Convention on Conservation of North Pacific Fur Seals between Canada, Japan, the Soviet Union and the United States;
- (5) the International Convention for the Northwest Atlantic Fisheries;
- (6) the Convention on Great Lakes Fisheries between Canada and the United States;
- (7) the International Convention for the Regulation of Whaling;
- (8) Inter-American Tropical Tuna Commission; and
- (9) International Council for the Exploration of the Sea.

The first international agreement contracted by Canada as an independent nation was a treaty negotiated with the United States in 1923 for the protection of halibut stocks of the Pacific Ocean. An international commission established under that treaty was given broader regulatory powers in subsequent conventions, most recently in 1953 when its name was changed to the International Pacific Halibut Commission.

The International Pacific Salmon Fisheries Commission has achieved much success toward rehabilitation of depleted salmon stocks in the Fraser River of British Columbia. Discussions were held in 1965 and 1966 between representatives of Canada and the United States to consider revision of the 1956 protocol which brought pink salmon of the convention area within the scope of the Commission's activities. Negotiations also took place during the same period and through 1967 in an endeavour to reach agreement on problems arising from the intermingling of salmon bound for rivers of northern British Columbia and southeastern Alaska.

Protection of the high seas fisheries of the North Pacific Ocean is the objective of the International North Pacific Fisheries Commission established under a convention ratified in 1953 by Canada, Japan and the United States. The Commission conducts co-ordinated scientific research programs and recommends conservation measures to be undertaken by the contracting parties.

Fur seal stocks of the North Pacific and its adjacent seas are protected by the Interim Convention on Conservation of North Pacific Fur Seals which was ratified in 1957 by Canada, Japan, the Soviet Union and the United States, and amended by a protocol in 1964. This convention was preceded by an international treaty signed in 1911 which prohibited the killing of fur seals at sea—a measure which, aided by careful management programs, made possible the restoration of depleted seal herds. At the present time, under the terms of the convention, Canada and Japan each receives annually 15 p.c. of the seal skins taken on the United States-controlled Pribilof Islands, and 1,500 skins from the harvest of the Commander and Robben Islands which are under control of the Soviet Union.



Tanu, the newest and largest of the Department of Fisheries and Forestry Pacific fleet of 40 vessels, will patrol offshore waters to protect them against incursion by foreign fishing fleets. It is also designed and fitted to carry out scientific studies on the high seas and has accommodation for 34 crew and scientists.

The International Commission for the Northwest Atlantic Fisheries (ICNAF) conducts studies and makes recommendations for measures to conserve and develop the fish stocks off Canada's East Coast. The convention establishing the Commission was signed in 1949 and has since been ratified by 14 nations: Britain, Canada, Denmark, the Federal Republic of Germany, France, Iceland, Italy, Norway, Poland, Portugal, Romania, Spain, the Soviet Union and the United States.

A Canadian proposal to bring the conservation of harp and hood seals of the Northwest Atlantic under the ICNAF Convention received final endorsement from member nations in 1966. First steps to initiate an international conservation program were taken at the 1967 meeting, when approval was given to recommendations to shorten the sealing season, effective in 1968, and to undertake an expanded research program. Conservation measures previously adopted voluntarily by participating nations were confirmed, and consideration is to be given to additional regulations and to proposals for establishing international inspection.

The Great Lakes Fishery Commission, set up under the 1955 Great Lakes Fisheries Convention, provides a channel for joint action by Canada and the United States for research into Great Lakes fish stocks and a program to control the parasitic sea lamprey responsible for depleting lake trout stocks.

As a member of the International Whaling Commission, Canada is obligated to submit statistical data on whales caught by Canadian vessels and to conduct scientific studies on whale stocks of special interest to Canada.

In 1967 Canada approved adherence to the Inter-American Tropical Tuna Commission. This Commission was established in 1950 by a convention between the Republic of Costa Rica and the United States with the aim of studying relationships between the populations of yellowfin and skipjack tunas and other kinds of fish taken by tuna vessels in the eastern

Pacific. Membership in the Commission was extended to Panama, Ecuador and Mexico. Because of increasing Canadian interest in the tuna fishery, Canada became a signatory to the convention.

Canada in 1967 became identified as a member of the International Council for the Exploration of the Sea. First established in Copenhagen in 1902, when it was entrusted with co-ordination of international investigations of the seas, particularly those in the eastern North Atlantic Ocean, ICES has in recent years provided considerable scientific support to the Research and Statistics Committee of ICNAF. There are 16 other member states: Belgium, Britain, Denmark, Finland, France, Germany, Holland, Iceland, Ireland, Italy, Norway, Poland, Portugal, the Soviet Union, Spain and Sweden.

Canada has also taken action to become a member of another international commission, the Atlantic Tuna Commission, having deposited its instrument of acceptance with the Director-General of the Food and Agriculture Organization of the United Nations in 1968. A draft convention for the conservation of tuna and tuna-like fishes was discussed at a conference held in Rio de Janeiro, Brazil, in 1966. Canada was one of the 17 nations represented at the conference which considered proposals for the establishment of an international commission to study tuna stocks and to recommend maximum catch levels for the various species. The Commission will be formed when the various nations involved ratify the convention.

Also in 1967, Canada was one of 18 nations represented at a Fisheries Policing Conference held in London, England, to consider regulations designed for safety at sea for vessels of countries fishing the North Atlantic. The conference endorsed a Convention on the Conduct of Fishing Operations in the North Atlantic and North Sea which was referred for ratification by the respective governments.

While co-operating with other nations to conserve high seas fisheries resources through international agreement, Canada acted in 1964 to protect inshore fisheries by establishing a 12-mile exclusive fishing zone on all coasts. The Territorial Sea and Fishing Zones Act proclaimed in that year has since been enforced against all countries except those having traditional fishing rights. Negotiations have been conducted with these latter countries with regard to the application of the fishing zones and to the location of base lines from which they are measured.

As evidence of its support for international consultation and co-operation in fisheries, Canada maintains active membership in the Fisheries Division of the Food and Agriculture Organization of the United Nations and in the Codex Alimentarius Commission which is concerned with world food quality standards.

The Fisheries Research Board of Canada.—The Fisheries Research Board is a research organization established by Act of Parliament (RSC 1952, c. 121) for the purpose of conducting basic and applied research on Canada's living aquatic resources, their environment and their utilization. Its antecedents go back to 1898 and it is thus the lineal descendant of one of the oldest scientific organizations in Canada and one of the oldest government-supported research organizations under the supervision of an independent scientific board in North America.

By its Act, the Board is placed under the control of the Minister of Fisheries (now the Minister of Fisheries and Forestry). The Board proper consists of a permanent chairman, who is appointed by the Governor in Council and who is a member of the Public Service of Canada, and "not more than eighteen other members" holding honorary appointments from the Minister of Fisheries for five-year terms; the Act requires that "a majority of the members of the Board, not including the chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department [of Fisheries] and the fishing industry". The scientific members are drawn principally from universities and research foundations across Canada, to include specialists in disciplines related to the Board's work. The industry members are selected from among Canada's leading business men with an intimate knowledge of fishing and the fishing industry and the Fisheries Branch

of the Department of Fisheries and Forestry representative is usually a senior staff member in Ottawa. Board members have both advisory and executive functions. The advisory functions are delegated in the first instance to regional Advisory Committees who conduct on-the-spot regional reviews and report to the Board on the operations and scientific programs with a view to their improvement. The executive functions are delegated to an Executive Committee elected from Board members and approved by the Minister.

The operations of the Board are highly decentralized, there being only a small administrative, supervisory and publications staff in Ottawa. The responsibilities of the Ottawa office include administration of a grant program to encourage university research in the fields of marine and aquatic science. The Board employs approximately 900 persons, of whom about 250 are scientists.

Biology.—The biological program of the Board is designed to add to fundamental knowledge concerning Canada's vast living marine and freshwater resources. Included here are life history, population and behaviour studies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other well-known economically important aquatic species of animals, such as salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies in fish and shellfish diseases, fish enemies including the ill effects of water pollution, and such basic studies as fish genetics, physiology and behaviour, the latter with a view to improving fish cultural and farming methods and also to improving fish farm and hatchery stocks. Besides these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

The biological work on the Atlantic Coast is conducted out of research stations located in St. Andrews, N.B., and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed from a laboratory situated in Ste. Anne de Bellevue, Que.; freshwater work is carried out from a station in Winnipeg, Man.; and work on the Pacific Coast is directed from research laboratories situated in Nanaimo, B.C. The Board operates 18 research vessels for its biological studies, varying from small inshore and lake craft to specially built seagoing ships. The Board acts as Canada's research agent for three international fisheries commissions and two international sea-mammal commissions to which Canada is party.

Oceanography.—Oceanography includes the study of the marine (and freshwater) environment in which aquatic organisms live. This is under continuing study to further knowledge in primary and secondary productivity and the occurrence of ocean and freshwater life of importance to man. Encompassed here also are investigations into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structure of large ocean areas including the ocean bottom where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas are regularly observed and correlated. These studies, as well as special studies of interest to the Royal Canadian Navy, the Department of Transport and the international fishery commissions, are carried out by the Board's two oceanographic groups operating from Dartmouth, N.S., and Nanaimo, B.C., with strong ship support from the Armed Services and the Department of Transport, and co-operation from the Department of Energy, Mines and Resources.

Technology.—Investigations are conducted toward improving methods of preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish. These include developments in refrigeration and the use of antibiotics as fish preservatives, improvements in canning, smoking and salting of fish as well as the development of new products for the utilization of abundant species that are not now used for food.

Fundamental studies of the structure and composition of fish proteins, fish oils and fish hormones, of the energy expenditure of migrating salmon and of the nutrition of marine bacteria are under way.

Technological investigations on the Atlantic Coast are carried out at research laboratories situated in Halifax, N.S., and Grande Rivière, Que., and applied work for Newfoundland is carried out at a Technological Unit in St. John's. For inland areas technological work is centred at Winnipeg, Man., and a research laboratory in Vancouver, B.C., undertakes investigation of Pacific Coast problems.

The Fisheries Prices Support Board.—Established under the Fisheries Prices Support Act of 1944 (RSC 1952, c. 120), the Fisheries Prices Support Board is responsible for investigating and, where appropriate, recommending government action to support prices of fishery products where declines are experienced. The basic principle of the legislation is to protect fishermen against sharp declines in prices and consequent loss of income. The Board is responsible to the Minister of Fisheries and Forestry and consists of a chairman, who is a senior officer of the Fisheries Branch of the Department of Fisheries and Forestry and five members chosen from the fishing industry in the various fishing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices other than its purchase policy nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of \$25,000,000 annually on recommendation of the federal Treasury Board and authorization of the Governor in Council.

Salted fish purchased by the Board during the nine months April-December 1968 totalled \$1,566,000. Most of this fish went to Nigeria but smaller quantities were sent to Jamaica, Guyana, Indonesia and Korea. Additional quantities of salted fish were purchased by the Board for the Canadian International Development Agency for disposal in Nigeria and Biafra. To stabilize the price of Lake Erie yellow perch, the Board bought \$700,000 worth of this species in 1968 and re-sold it to the processing trade. It also purchased 12,000 cases of canned mackerel in the Maritime Provinces, worth \$63,000, to meet the requirements of the World Food Programme. Subsidies paid by the Board on fresh and frozen fish produced in the Maritime Provinces and Newfoundland amounted to \$4,100,000.

The Board co-operates with the Economics Service of the Department of Fisheries and Forestry in the collection and analysis of costs of fishing operations and, in co-operation with the Department of Industry, Trade and Commerce, maintains a continuous review of the markets for various fishery products. A small staff is maintained for administrative activities at headquarters of the Board in Ottawa.

Subsection 2.—The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

Newfoundland.—The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with the improvement and development of fishing and production methods. It conducts experiments and demonstrations in new designs of fishing

* Prepared by the respective provincial departments responsible for fisheries administration.

gear as well as the modification of existing types, the construction of multi-purpose fishing craft and the exploration of potential fishing grounds with a view to increasing catching efficiency.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers. Aid to fishermen for the construction of modern vessels capable of a greater variety of fishing operations and larger production is provided by loans from the Newfoundland Fisheries Loan Board and bounty payments at the rate of \$160 a ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 1955. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes financial assistance in maintaining and prolonging the life of the existing fleet. An Inshore Fisheries Assistance Programme provides a maximum bounty of \$10 a foot on boats measuring from 24 to 35 feet and bounties are also paid to fishermen on certain types of synthetic fibre fishing nets and lines. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of \$250 a ton for vessels measuring from 15 to less than 100 gross tons, and \$150 a ton for vessels of between 100 and 400 gross tons.

Other services include: advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics; assistance to fishermen's unions; weather and ice reports; and search and rescue. The Fisheries Salt Act, 1957 provides for rigid control over the use of fisheries salt.

Sport Fisheries.—The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Natural Resources Branch of the provincial Department of Mines, Agriculture and Resources but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

Prince Edward Island.—The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity and is concerned mainly with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and the Fisheries Branch of the federal Department of Fisheries and Forestry, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at a subsidized interest rate. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act, the Prince Edward Island Industrial Corporation or the Industrial Enterprises Limited.

Sport Fisheries.—Game fisheries are the responsibility of the provincial Department of Fisheries. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada and the Provincial Fish and Wildlife Division at various sites in the province. Unfortunately, many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

Nova Scotia.—Although the Federal Government has exclusive jurisdiction over the marine and inland fisheries of Nova Scotia and attends to all phases of administration

related thereto, the Nova Scotia Government operates in several fields where provincial initiative is found to be necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the Nova Scotia Department of Fisheries. The Fishermen's Loan Board is administered by that Department and the Industrial Loan Board by the Nova Scotia Department of Trade and Industry; the first makes loans to fishermen for the purchase of boats and engines and the second makes loans for the construction or improvement of fish processing plants. Fisheries engineers perform inspection and survey duties for the Loan Boards and provide technical assistance and advice to loan applicants and others in the fisheries and allied industries, notably the boatbuilding industry. Instructors conduct courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of gear. The on-course instruction is supplemented frequently by informal on-the-spot assistance to smaller groups who find themselves in need of technical help with particular problems. The Nova Scotia Department of Fisheries, with the financial and/or technical assistance of the federal Department of Fisheries and Forestry, organizes and conducts explorations of fishing grounds for new resources and the adaptability of new, improved gear and methods.

Sport Fisheries.—In recent years, Nova Scotia, through the Wildlife Division of its Department of Lands and Forests, has spent a considerable amount of money on management and research in certain lakes and streams in the province with a view to aiding the Atlantic salmon and trout fishery. A continuing program of lake and stream investigations was begun in 1961 in order to obtain information useful in the formulation of a fish management program for the future. A system of rearing ponds, capable of producing 200,000 yearling speckled trout annually, has been established on the Medway River in Queens County and the Moser River in Halifax County. Several projects dealing with reclamation, farm ponds, rainbow trout and smallmouth bass are also being conducted. Full-time fisheries biologists are employed by the Division.

The Nova Scotia Travel Bureau, a division of the provincial Department of Trade and Industry, has been promoting saltwater sport fishing by conducting a series of courses for captains contemplating the establishment of charter services, awarding prizes to sportsmen with the largest tuna and bass catches of the season, sponsoring the International Tuna Cup Match and the Intercollegiate Game Fish Seminar and Fishing Match, and publishing a brochure listing charter boats available in the province.

New Brunswick.—Commercial fishing is one of the most important basic industries of New Brunswick, employing about 6,200 fishermen with annual earnings of \$12,000,000 and 3,000 plant workers. The annual marketed value of fish products is about \$48,000,000 of which 90 p.c. is exported to the United States. New Brunswick's commercial fisheries, both tidal and inland, are under the legislative jurisdiction of the federal Department of Fisheries and Forestry; angling in Crown waters is the responsibility of the provincial Department of Natural Resources.

The New Brunswick Department of Fisheries, established in 1963, has four Branches. The *General Administration Branch* is responsible for personnel, accounting and field staff and supervises the regional offices covering the three main fishing areas of the province. It maintains close liaison with various government departments and agencies, both federal and provincial, to assist the fishing industry in the province.

The functions of the *Boatbuilding and Maintenance Branch*, with a personnel consisting of marine engineers, a naval architect and boat inspectors, include the study, modification and approval of plans and specifications of the numerous types and classes of fishing vessels employed in the fisheries of the province as well as the inspection of vessels financed by the Fishermen's Loan Board. New designs are being introduced and the trend to larger, more modern vessels is becoming more prevalent. Combination multi-purpose vessels have proved profitable to both inshore and offshore fishermen. Under the leadership of the ex-

perienced staff of this Branch, New Brunswick fishermen are now operating a fleet geared for diversified operation, permitting the inexpensive and easy conversion from one fishery operation to more lucrative operations throughout the season. A new 600-ton capacity marine railway dry dock was put into operation at Bas Caraquet in November 1968 to service the expanding offshore fishing fleet of northeast New Brunswick. A 200-ton transfer system adjacent to the dry dock provides storage facilities for smaller vessels to lay up for the winter or to undergo major repairs.

The *Exploratory Fishing and Education Branch* continues the experimental and exploratory fishing and fish processing projects that have been carried on for many years in co-operation with the Industrial Development Service of the federal Department of Fisheries and Forestry. Technical and financial assistance are made available to the New Brunswick Department of Fisheries for projects undertaken toward modernizing fishing and processing methods, experimenting with new types of fish-catching equipment and demonstrating its operation to fishermen, and exploring and developing hitherto unexploited or under-exploited species of molluscs, crustaceans, fishes and seaweeds. Results of this extensive experimental work and research studies include the establishment of Queen crab, shrimp, tuna and eel fisheries in New Brunswick. During 1968-69, 14 fisheries development projects were undertaken on a shared-cost basis with the federal Department of Fisheries and Forestry. Of particular interest was the Queen crab development which included the designing and constructing of special equipment. In 1968, 50 vessels fished this deepsea delicacy and several million pounds were processed in eight crab plants. Shrimp exploration was started in the Gulf of St. Lawrence in 1966 with encouraging results; seven plants are now processing shrimps from the Bay of Fundy and the Gulf of St. Lawrence. Other developments such as Irish moss, eels, mackerel, scallops and smelts are also processing very satisfactorily. The Branch operates a modern school of fisheries at Caraquet where, in 1967-68, 179 fishermen took training in the various phases of their trade. The school program includes navigation, administration, marine biology, oceanography, radiotelephone, metal and woodworking, arithmetic and languages and other related subjects and graduates may receive practical training aboard large modern fishing vessels under a joint federal-provincial program of technical up-grading. Following a few weeks of training, apprentices are taken on as regular crew members.

The *Fish Inspection and Marketing Branch*, created in late 1967, is responsible for the administration of the New Brunswick Fish Inspection Act and Regulations. For greater effectiveness and to avoid duplication of personnel, 30 Fish Inspectors of the federal Department of Fisheries and Forestry, Maritimes Area, were appointed to carry out the application of the New Brunswick Act and Regulations. The new Branch is active in promoting the expansion and modernization of existing plants as well as the establishment of additional fish processing plants in the province. Its efforts are aimed at studying existing markets and developing new ones for fishery products at home and abroad in collaboration with other government agencies, federal and provincial. The Branch is also responsible for publicity and information to the industry and the general public.

The *Fishermen's Loan Board of New Brunswick* is a body corporate operating under the jurisdiction of the Minister of Fisheries. It was established in 1946 and is now operating under the Fishermen's Loan Act of 1952 and the regulations of Nov. 1, 1963. Its function is to improve and develop the fishing industry of the province by providing adequate financial assistance to individual fishermen, groups, associations, processing firms and corporations, at a moderate rate of interest to construct modern fishing vessels, make major repairs and purchase engines and equipment. Since its inception the Board has granted over 1,700 loans to New Brunswick fishermen for a total of over \$21,000,000; outstanding loans totalled \$10,000,000 in 1968.

Loans are repayable within a five-year period on small inshore fishing vessels; repayment schedules on large trawlers may extend to 15 years, based on the gross proceeds of the catch. Most of the new fishing vessels being built for fishermen and fish processing firms in the province are financed by the Board. The Board acts as agent for the federal Depart-

ment of Fisheries and Forestry financial assistance program granted to owners of new fishing vessels, which are not eligible for the shipbuilding subsidy granted by the federal Department of Industry.

Sport Fisheries.—Sport fishing contributes substantially to the economy of the province, mainly through the tourist trade. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the St. John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists to the province each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are also sought after by both residents and non-residents in the hundreds of streams, rivers and lakes of the province.

Quebec.—The Quebec Department of Industry and Commerce administers the commercial fisheries of the province. For the benefit of producers and fishermen, it operates a network of 58 cold storage plants for the freezing and preservation of fish and the supplying of frozen bait and ice; the plants have a total daily freezing capacity of 500 tons and a storage capacity of 25,000,000 lb. The Department also owns and maintains about 110 stations in small fishing ports where fish are kept under proper conditions while awaiting collection by truck or boat, and an artificial drying plant with a processing capacity of 3,000,000 lb. of fish annually. A staff of fish wardens, technicians and technologists administers fishery legislation and assists in the application of new techniques for the expansion of the industry. The central administration is located in Quebec City with offices at the principal fishing centres. Fish inspection is carried out by federal inspectors who are given additional powers by the provincial government with respect to local sales.

Educational work among the fishermen and producers is conducted by the Department to teach the latest methods of preparing fish and of producing high-quality products. A Fisheries Training School, operated by the Department of Education at Grande Rivière, gives free theoretical and practical courses in fishery to fishermen of all ages. A fisheries training vessel was built and put in operation in June 1968. La Fédération des Pêcheurs unis du Québec receives encouragement through the Fisheries Division of the Quebec Council of Co-operation subsidized by the Federal Government. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. Fish consumption is promoted through advertising campaigns in newspapers and magazines, exhibits at fairs, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets.

The Department adheres to the federal-provincial agreement on the building of dragners and longliners and assumes the building costs on a capital refunding plan. As at Mar. 31, 1968, the fishing fleet consisted of three stern-trawlers (152-166 feet), 14 82-foot steel dragners, eight 89-foot steel combination trawler-seiners, three 87-foot wooden dragners, 86 65-foot and 60-foot wooden dragners, 47 "gaspésiennes" and one clam-digger. The cost of construction of fishing boats since 1952 has been about \$18,000,000 and loans to fishermen have exceeded \$13,000,000.

Biological and hydrographical research is conducted in the Gulf of St. Lawrence, directed by the Marine Biological Station at Grande Rivière, and studies of the biology of freshwater fish of the St. Lawrence River and its tributaries are undertaken at a laboratory located in Quebec City. An aquarium in Quebec City exhibits freshwater and saltwater fish in 60 large tanks.

Sport Fisheries.—Sport fishing in the inland waters of Quebec is under the jurisdiction of the Department of Tourism, Fish and Game, which employs 250 full-time wardens and issues the licences required for sport fishing and hunting. It maintains four hatcheries at strategic points throughout the province for the distribution in public waters of speckled trout, brown trout, rainbow trout and grey trout, splake, ouananiche, maskinonge and salmon.

Excellent fishing may be found in all provincial parks and reserves, except Mont Orford Park. Gaspésian and Laurentide Parks are renowned for trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Eight salmon streams are open to anglers—the Petit Saguenay River, the Laval River, the Moisie River, the Matane River, the Cap Chat River, the Ste. Anne River, the St. Jean River and the Matapédia River.

A joint committee composed of departmental officials and the directors of the Federation of Fish and Game Associations makes recommendations to the provincial government concerning legislation required for the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario.—The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests, under the authority of the federal Fisheries Act, the Fishery Regulations for the Province of Ontario, the Ontario Game and Fish Act and the Regulations connected therewith.

Commercial Fisheries.—The commercial fishing industry in Ontario provides employment for about 3,000 persons directly and for many more indirectly, and produces an annual yield of from 45,000,000 lb. to 55,000,000 lb. of fish. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie. The principal species of fish taken commercially are perch, smelt, whitefish, pickerel, lake trout, white bass, pike, herring, chub, sheepshead, carp, catfish and bullheads, sturgeon, eel, goldeye, rock bass, sunfish and suckers. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60-foot tugs, and types of gear vary from gillnets, pound-nets and trap-nets, seines and baited hooks to small hand-operated seines and dip-nets. Fishing methods and equipment have been modernized extensively during the past few years. Diesel-driven steel-hull tugs have replaced steam-driven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Trawling has proved very efficient in harvesting smelt on a year-round basis in Lake Erie.

Most Ontario fishermen are organized into various local associations. Many of these associations are, in turn, represented by the Ontario Council of Commercial Fisheries which performs important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of importance also in the organization of the fishery in the province.

Sport Fisheries.—Angling in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some 68,490 sq. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as brook, rainbow, lake and brown trout, walleye, smallmouth and largemouth bass, pike and maskinonge. It is difficult to measure the total value of the sport fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of \$3,000,000. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 21 forest districts of the province.

Provincial Hatcheries.—Ontario operates 16 hatcheries and rearing stations, the main species reared in these operations being brook trout, rainbow trout, lake trout, smallmouth

and largemouth bass, and maskinonge. A program of modernization of the hatchery system is being undertaken—the Normandale Hatchery in Norfolk County and the North Bay Station have recently been completely renovated.

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies concerning lake trout, smallmouth bass and brook trout are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies are also being conducted on walleye, parasitology and limnology. A selective breeding experiment concerning the hybrid of lake trout and brook trout is progressing; the deep-swimming character of the lake trout and the character of maturity at early age of the brook trout are those being selected for combination in the hybrid. Investigations include the study of exotic species of fish for use in the Great Lakes. Kokanee (sockeye salmon) plantings have been made in Lake Ontario and Lake Huron.

Manitoba.—Manitoba has almost 40,000 sq. miles of fresh water and 400 miles of coastline on Hudson Bay and, altogether, about 300 lakes and rivers covering 30,000 sq. miles are commercially fished. Some 3,000 persons are employed in primary commercial fishing and an equal number derive part of their living from fish processing and the supply of materials and services to the industry. The industry is particularly important to people living in remote northern communities where fishing provides a major part of their cash income. These northern lakes produced 8,914,500 lb. or 43 p.c. of the provincial total of 20,840,300 lb. in 1967-68. The southern part of the province contributed 57 p.c. of the total as follows: Lake Winnipeg, 6,379,400 lb.; Lake Manitoba, 2,204,900 lb.; Lake Winnipegosis, 2,980,600 lb.; and other southern lakes, 360,900 lb. The total value to the fishermen in 1967-68 was \$2,529,178 and the value as marketed was \$4,721,417. The average marketed catch for the five years 1964-68 was 28,949,600 lb. worth \$3,952,600 to the fishermen and \$6,628,400 at the wholesale level after processing. About half of the catch is taken during open water and the remainder through the ice in winter.

There are about 24 species of fish caught commercially in Manitoba but those of highest annual value to the fishermen are whitefish, pickerel (walleye), sauger and pike. Over 90 p.c. of the catch is exported, mostly to the United States. A quantity of the less valuable kinds and some processing wastes are used as food on mink ranches and for the making of meal. Capital investment in gear, boats, warehouses, etc., approaches \$3,100,000.

Supervision of commercial fishing operations and the enforcement of the Manitoba Fishery Regulations occupy a staff of Conservation Officers who patrol the province using motor boats during the open-water season, snowmobiles and light trucks during the winter and aircraft in remote areas. The Fisheries Branch of the Department of Mines and Natural Resources, in co-operation with the Department of Health, conducts a systematic program of plant inspection to raise the standard of sanitation and improve the processed product.

A continuing program of biological research is conducted by the Fisheries Branch to provide management information in the interest of a sustained annual yield. Close liaison is maintained with the Fisheries Branch of the federal Department of Fisheries and Forestry and the new Freshwater Institute (Fisheries Research Board of Canada) on the University of Manitoba campus in the effort to develop new fish products and effect more complete utilization of the province's fishery resources.

Fish culture activities include two pickerel hatcheries (Lake Manitoba and Lake Winnipegosis), a whitefish hatchery (Lake Winnipeg), a combination pickerel and whitefish hatchery (Lake Winnipeg), a trout hatchery (Whiteshell Provincial Park), and two spawning camps. Fish to replenish the commercial fishing waters are raised in the pickerel

and whitefish hatcheries, and brook, rainbow and lake trout as well as splake and kokanee salmon are raised in the Whiteshell Hatchery to be planted in sport fishing waters.

Sport Fisheries.—Each year, about 110,000 anglers fish an estimated 1,261,000 angler-days and spend an estimated \$12,000,000 in pursuit of this sport. The popularity of angling in the province is increasing by approximately 5 p.c. a year. The major species taken are walleye, northern pike, perch, lake trout and brook trout. Approximately 45 p.c. of Manitoba's angling takes place in the southeastern corner of the province (Whiteshell and Lac du Bonnet area). About 80 p.c. of the anglers are Manitoba residents, 4 p.c. originate in other provinces and 16 p.c. are from the United States.

Saskatchewan.—Approximately 32,000 sq. miles of water, about one eighth of Saskatchewan's area, provide the basis for a fishery resource that contributes much to the economic and recreational activity of the province. The Fisheries Branch of the Department of Natural Resources, with head office at Prince Albert, administers the fisheries. The Branch has three main Divisions—Management, Research and Fish Culture—which are responsible for planning policies; developing programs to ensure the proper management and utilization of the fishery resource; interpreting and explaining policies, programs and regulations; administering the Acts and Regulations (both federal and provincial); and adapting regulations to meet changing conditions. Its objective is to encourage efficient multi-use of the fishery, taking into consideration the interests of the various groups concerned—commercial fishermen, mink ranchers, anglers and the public generally.

The commercial fishery in Saskatchewan normally averages between 13,000,000 and 15,000,000 lb. annually. Although whitefish makes up about 50 p.c. of the landed catch, lake trout, walleye, tullibee, pike, goldeye, suckers and sturgeon are also taken commercially. In 1966 the production of slightly over 13,700,000 lb. of fish was worth \$1,730,000 to the fishermen and had a market value of \$3,413,231. The central marketing agency for 18 local fishermen's co-operatives marketed about half of the provincial catch. Sixty licensed mink ranchers harvested slightly over 6,000,000 lb. of rough fish, mainly suckers, burbot and tullibee (cisco) and another 1,000,000 lb. of fish was utilized by free Indian and domestic fishing permittees. A commercial harvest of 250,000 lb. of brine shrimp and eggs from several saline lakes were harvested and processed for sale to fish hobbyists.

The Fish Research Division conducts biological surveys on most of the large lakes and on many smaller water bodies and streams in the province to provide information for the development of fisheries management policies and programs. The current program is designed to determine productivity of water bodies, secure information on abundance and relationship of fish species, investigate ecology and assess factors affecting environment of fish, develop techniques to achieve maximum harvest of fish populations without prejudice to continued production, and develop techniques to facilitate rehabilitation and stocking of small water bodies. Limnological and fisheries surveys are continuing on lakes along the La Ronge Highway, along Highway 106, in the Saskatchewan River Delta, on Tobin Lake, and in the Meadow Lake Provincial Park. The long-term creel census on Lac la Ronge is being supplemented by an intensive investigation of the life history and ecology of northern pike. In co-operation with ARDA, a three-year study has been undertaken of the sport fish capability of waters between the International Boundary and the 55th parallel of north latitude.

The provincial hatchery at Fort Qu'Appelle reared over 12,600,000 fish for stocking purposes in 1966. The majority of these fish were obtained from spawn camps conducted in northern Saskatchewan.

Angling licence sales during 1966 were the highest on record with 110,017 licences being sold. Saskatchewan has some of the finest sport fishing waters in Canada as evidenced by an increasing number of sportsmen interested in trophy fishing. Record-size fish taken during the year included a 44-lb. lake trout, a 28-lb.-13-oz. northern pike, a 16-lb. rainbow trout, a 10-lb.-3-oz. walleye and a 4-lb.-5-oz. grayling.

A continuous program of inventory and examination of water bodies containing sport fish is maintained by the Management Division of the provincial Fisheries Branch. During 1966, 119 water bodies were examined. The use of chemicals to eliminate undesirable fish populations in small lakes continues as an important management tool and two lakes have been treated to eliminate stunted fish populations. Recent tests indicate the subsequent stocking of rainbow, brook and splake trout are well established.

Alberta.—Commercial and sport fishing is administered by the Fish and Wildlife Division of the Department of Lands and Forests, under the authority of the Fisheries Act (Canada) and the Fishery Act (Alberta). Production of commercial fish from Alberta's 6,485 sq. miles of fresh water for the year ended Mar. 31, 1968, was 10,437,691 lb. Landed value of the catch was \$874,526 and marketed value amounted to \$1,559,976. Lake whitefish is the most valuable commercially caught fish; it accounted for 59 p.c. of the total marketed value but represented only 23 p.c. of the total landings. Production of tullibee (cisco), primarily used for animal food, dropped 10 p.c. from the previous year but remained in second place in value among the fish marketed. Other species taken, in order of marketed value, were pike, walleye (pickerel), burbot (ling), lake trout, perch and suckers. Of the total quantity taken, 2,106,692 lb. were marketed outside the province and of this amount, 1,126,381 lb. went to the United States.

Sport Fisheries.—Angling licence sales increased from 133,092 in the year ended Mar. 31, 1967 to 136,693 in 1967-68. Fish hatchery facilities in Calgary and the rearing station at Raven produced 3,053,183 trout and kokanee for stocking provincial waters. Rainbow trout accounted for 77 p.c. of the total and brown trout, brook trout, lake trout and kokanee made up the remainder. In addition, 1,724,190 walleye, perch and pike were stocked in various locations where winterkill had removed resident populations or where new introductions were required.

Decentralization of the biological staff was completed during 1967-68 and the six regional biologists are now located in their respective regional headquarters. A fishery research section was created, located in Edmonton and soon to be housed in a new provincial consolidated laboratory building. A three-year project was undertaken, as a part of the Canada Land Inventory program, to classify the waters of Alberta according to their sport fish capability.

British Columbia.—A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and Conservation. Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking, the administrative and regulative jurisdiction over the fisheries of British Columbia rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. The commercial harvesting of oysters and marine aquatic plants is regulated by provincial permits and licences. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters, is vested in the Fish and Wildlife Branch which operates a number of trout hatcheries and egg-taking stations for re-stocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

PART II.—FURS

Section 1.—The Fur Industry*

The value of raw furs produced in Canada in the 1966-67 season amounted to \$35,103,371, a decline of 23 p.c. compared with the buoyant 1965-66 returns. This decline affected the values of both wild and ranched furs which were off 27 p.c. and 21 p.c., respectively. In 1966-67 ranched furs accounted for 65 p.c. of the value of furs produced and wild furs for the remainder.

Fur Trapping.—The value of the wild fur catch in 1966-67 was \$12,446,008 and, as shown in Table 3, p. 587, the five principal kinds of pelts taken, according to value, were beaver, muskrat, hair seal, wild mink, and fur seal.

Trapping is carried on in all the provinces and territories of Canada. In the 1966-67 season the main producers were Ontario which accounted for 21 p.c., Quebec 14 p.c., Alberta 12 p.c., the Northwest Territories 11 p.c. and Manitoba 10 p.c. Conservation measures and trapping regulations enacted with a view to achieving maximum annual production on a sustained basis, have been of major assistance in maintaining the numbers of fur bearers. Even in the partly settled areas, substantial catches of beaver, muskrat, mink, raccoon, wolf and squirrel are still made each year. In these sectors most of the trappers operate on a part-time basis, combining trapping with wage employment but in the northern areas where opportunities for wage employment are limited, trapping remains an important source of revenue. However, even in the isolated parts of the country the traditional pattern of trapping is changing and natives who formerly spent the winter months, along with their families, on the trapline now congregate with their dependants in settlements. This community-type living has many advantages for the trapper's family such as regular schooling, medical attention and the broader social life of the settlement but one of the undesirable results is that the areas around the settlements tend to be over-trapped and the less accessible areas neglected, with consequent waste of the fur resource. Little success has been achieved from efforts to make trapping more attractive and remunerative. There are too many other easier and more profitable ways of making a living than by undergoing the rigours of the trapline.

Fur Farming.—Almost two thirds of the Canadian fur production now comes from fur farms and mink is by far the most important animal raised. The demand for fox and nutria pelts is very limited but it is interesting to note the growing popularity of chinchilla. This animal, originally from the western slopes of the Andes Mountains in South America, was introduced into Canada in the late 1930s and is now being raised in most provinces.

* Prepared by the Livestock Division, Production and Marketing Branch, Canada Department of Agriculture, Ottawa.

Mink.—Mink accounts for 99.1 p.c. of the value of fur farm production and is raised on farms in all the provinces; the principal producers in order of importance are Ontario, British Columbia, Manitoba and Alberta. The following figures show the growth of the industry:—

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	\$		No.	\$
1930.....	3,284	10.52	1955.....	786,760	20.07
1935.....	30,558	10.58	1960.....	1,203,853	14.03
1940.....	229,202	9.64	1965.....	1,624,154	17.41
1945.....	255,968	21.51	1966.....	1,804,784	12.41
1950.....	589,352	17.08			

Production increased by 11 p.c. in 1966 over 1965 but, because of a sharply weaker market, the value of the crop was down 21 p.c.

Mink farming is a specialized business calling for a high degree of skill and experience. The successful breeder must have a thorough knowledge of the habits and requirements of his animals. Mink must be fed a carefully prepared diet, tailored to meet the varying demands of the breeding, growing and furring-out seasons. Also, a sound understanding of the complex field of genetics is required for selective breeding programs through which breeding herds may be improved and new colours produced. Diseases of mink have been the subject of considerable research, as a result of which most mink farmers now carry out programs of preventive vaccination for control of the major diseases.

Mink are usually housed in roofed structures with more or less open sides. These sheds may contain up to several thousand animals each, and the regular pattern of the individual pens within the structure facilitates the use of automatic watering and powered feeding systems permitting a single operator to tend many animals. Even so, production costs in the 1960-66 period showed considerable increase and, except for 1965, mink pelt prices have failed to keep pace. One result of the lower profit margins has been an acceleration of the trend toward large producing units and the decline in the number of small operators. In 1950, there were 589,352 mink pelts produced on 2,557 farms, an average of 230 pelts per unit; in 1960, there were 1,203,853 mink pelts produced on 2,331 farms, an average of 516 per unit; by 1966, the number of mink farms had declined to 1,452 but production increased to 1,804,784 pelts, an average of 1,243 per farm.

Chinchilla.—This fur bearer is being raised in most provinces, particularly in British Columbia, Ontario, Alberta and Quebec. Although it adapts well to raising under domestic conditions, chinchilla farming is comparatively new and additional research is required on many aspects of the business. The following figures show the production of chinchilla pelts in recent years:—

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	\$		No.	\$
1957.....	4,701	13.84	1962.....	11,193	13.56
1958.....	8,336	13.43	1963.....	12,226	14.03
1959.....	8,558	13.17	1964.....	12,846	13.14
1960.....	9,067	13.06	1965.....	17,109	13.18
1961.....	10,559	14.07	1966.....	19,133	11.88

Fox.—In the 1950s, average prices realized for the annual crop of ranched fox pelts ranged from \$7.30 (1956) to \$12.42 (1959) but in the mid-1960s, sparked by a strong demand from Japan, prices increased substantially.

Year	Pelt Production	Average Realization	Year	Pelt Production	Average Realization
	No.	\$		No.	\$
1961.....	1,811	10.00	1964.....	780	43.37
1962.....	1,647	10.00	1965.....	523	53.21
1963.....	830	15.09	1966.....	804	37.35

Encouraged by the higher returns, raisers held over more breeding animals for the 1966 season; at Jan. 1, 1966 there were 918 foxes on 43 farms, compared with a breeding herd of 761 on 40 farms at Jan. 1, 1965. In addition to the 1966 output of 804 pelts, a number of foxes from the 1966 crop were retained as breeders so that, at Dec. 31, 1966, the breeding herd totalled 1,122 animals. Despite the higher prices, breeders have been cautious about expansion. The demand is principally from Japan and there is some question as to whether it will be sustained.

Fur Marketing.—Some Canadian ranched mink are marketed in the United States and fairly substantial quantities of wild furs are sold in London, England, but most of the annual Canadian fur crop is marketed through one or other of the seven fur auction houses located in Montreal, North Bay, Winnipeg, Regina, Edmonton and Vancouver. Canadian furs are highly prized in world markets and buyers from many countries attend the auctions, purchasing for their own accounts or on behalf of firms anywhere in the world.

Pelting on the mink farms starts around mid-November and the first auctions of the new season's pelts are held early in December. Sales of ranched mink continue throughout December and January, in which month furs from the wilds also become available in quantity. The marketing season extends from December each year through to the following June, or until the crop has been sold. In all the producing countries, the new season's ranched mink pelts reach the market within approximately the same period. It is not, therefore, unusual for major auctions to be scheduled by outlets in Canada, the United States and Scandinavia on the same dates. It then becomes of the utmost importance for the respective auctions to publicize their own offerings widely, so as to attract the strongest attendance possible and ensure that adequate purchasing power and competitive bidding is available for their sales. These circumstances are peculiar to the marketing of ranched mink and they place considerable stress on both the auction houses and the buyers in the opening months of the selling season. Marketing the wild fur crop is spread more evenly throughout the season. The slower process of passing furs from the trapper to the fur buyer and on to the auction house is an important factor in the orderly marketing of the furs from the North. Most of the Canadian chinchilla pelts are exported in the raw state to the United States where they are dressed before being offered for sale. The pelts are sold through two outlets in New York and most of the Canadian skins are intersorted with pelts produced in the United States. This arrangement benefits producers in both countries since the resulting larger quantities make it possible for the grading specialists to make up "lots" containing pelts well matched as to size, colour and quality.

Section 2.—Fur Statistics

Subsection 1.—Fur Production and Trade*

Total Fur Production.—Annual figures of raw fur production, available since 1920, are now based on figures of royalties, export taxes, etc., provided by the game departments of all provinces except Prince Edward Island; those for Prince Edward Island are based on returns by fur dealers in that province.

Table 1 shows the fluctuating trend of the fur industry over the past two decades. It should be mentioned that, from 1964 on, the figures include hair and fur seal pelts, which in 1967 had a value of \$2,045,878. The proportion of the total value of pelts sold from fur farms continues upward, reaching 65 p.c. in 1967.

* Prepared by the Agriculture Division, Dominion Bureau of Statistics.

**1.—Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms,
Years Ended June 30, 1948-67**

Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms
	Number	Value			Number	Value	
		\$				\$	
1948.....	7,952,146	32,232,992	37	1958.....	6,440,319	26,335,109	60
1949.....	9,902,790	22,899,882	33	1959.....	5,370,531	25,836,617	62
1950.....	7,377,491	23,184,033	34	1960.....	5,999,414	31,186,078	60
1951.....	7,479,272	31,134,400	36	1961.....	6,237,360	28,737,087	59
1952.....	7,931,742	24,215,061	42	1962.....	5,771,129	28,971,077	64
1953.....	7,568,865	23,349,680	43	1963.....	5,123,395	31,943,418	62
1954.....	6,274,727	19,287,522	49	1964 ¹	4,572,594	35,412,822	63
1955.....	9,670,796	30,509,515	43	1965 ¹	5,609,025	36,534,609	58
1956.....	7,727,264	28,051,746	56	1966 ¹	5,507,199	45,622,852	63
1957.....	6,919,724	25,592,130	57	1967 ¹	5,221,750	35,103,371	65

¹ Includes seal pelts.

Table 2 shows the provincial distribution of fur production. Ontario continues to lead the provinces and territories in this respect, accounting for 27.1 p.c. of the total value in the 1966-67 season compared with 26.4 p.c. in the previous season. Increased percentages were also shown by New Brunswick, Quebec, Saskatchewan and Yukon and Northwest Territories.

**2.—Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30,
1966 and 1967**

Province or Territory	1966			1967		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	\$		No.	\$	
Newfoundland.....	97,558	1,132,605	2.5	48,671	515,258	1.5
Prince Edward Island.....	7,838	119,075	0.3	6,090	74,810	0.2
Nova Scotia.....	239,187	2,891,081	6.3	156,200	1,460,971	4.2
New Brunswick.....	33,348	407,341	0.9	30,926	366,427	1.0
Quebec.....	381,647	4,343,671	9.5	423,055	3,368,465	9.6
Ontario.....	1,220,197	12,025,005	26.4	1,191,660	9,516,884	27.1
Manitoba.....	919,130	6,589,341	14.4	776,311	4,666,868	13.3
Saskatchewan.....	717,481	3,231,588	7.1	738,867	2,527,642	7.2
Alberta.....	1,043,224	5,264,065	11.5	856,515	3,984,294	11.4
British Columbia.....	516,300	7,390,885	16.2	554,993	5,645,288	16.1
Yukon Territory.....	22,308	64,929	0.1	43,915	92,837	0.3
Northwest Territories.....	291,953	1,151,908	2.5	304,505	1,374,532	3.9
Canada¹.....	5,507,199	45,622,852	...	5,221,750	35,103,371	...

¹ Totals include pelts and values not allocated to a province or territory, mainly Alaska fur seal and Atlantic Coast hair seal.

Wild Fur Production.—The principal kinds of wild fur pelts taken, according to value, in 1966-67 were beaver, seal, muskrat and mink. These four kinds accounted for 76 p.c. of the total value of wild pelts produced, beaver alone accounting for 38 p.c. The number of beaver pelts produced was somewhat lower than in the previous year and the average value per pelt decreased from \$15.40 to \$12.73. In fact, the average value of every kind of pelt except wildcat and wolverine, was lower in 1966-67 than in 1965-66.

3.—Pelts of Wildlife Fur Bearing Animals Taken, by Kind, Years Ended June 30, 1966 and 1967

Kind	1965-66 Fur Season			1966-67 Fur Season		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	\$	\$	No.	\$	\$
Badger.....	792	6,423	8.11	1,163	8,852	7.61
Bear—						
White.....	624	81,473	130.57	724	92,660	127.98
Black or brown.....	2,482	82,287	33.15	1,810	43,055	23.78
Grizzly.....	46	4,071	88.50	215	17,821	82.88
Beaver.....	372,635	5,739,147	15.40	371,533	4,731,570	12.73
Cougar.....	49					
Coyote or prairie wolf.....	24,326	273,031	11.22	17,458	115,629	6.62
Ermine (weasel).....	178,672	240,356	1.35	133,592	130,873	0.97
Fisher.....	8,216	125,921	15.33	6,856	78,283	11.41
Fox—						
Blue.....	70	737	10.53	189	1,889	9.99
Cross and red.....	25,357	268,205	10.58	29,984	170,657	5.69
Silver.....	431	8,951	20.77	287	4,252	14.82
White.....	11,656	191,623	16.44	34,126	536,052	15.70
Not specified.....	38	528	13.89			
Lynx.....	14,583	544,605	37.35	13,038	362,103	27.77
Marten.....	43,860	503,308	11.47	55,042	498,537	9.05
Mink.....	85,581	1,226,046	14.33	88,614	1,017,947	11.48
Muskrat.....	1,830,307	3,207,389	1.75	1,732,404	1,695,245	0.97
Otter.....	17,944	447,901	24.96	16,411	299,096	18.22
Rabbit.....	51,424	25,835	0.50	50,672	21,457	0.42
Raccoon.....	31,568	136,994	4.34	33,911	106,857	3.15
Seal—						
Fur, North Pacific.....	16,797	1,009,933	60.13	12,830	672,782	52.44
Hair.....	251,227	2,386,601	9.30	153,980	1,373,096	8.92
Skunk.....	684	373	0.55	289	132	0.45
Squirrel.....	890,091	561,755	0.63	635,058	390,056	0.61
Wildcat.....	3,352	30,258	9.03	3,658	36,033	9.85
Wolf.....	1,085	24,301	22.40	1,453	26,124	17.97
Wolverine.....	411	9,953	24.22	602	14,950	24.83
Totals.....	3,864,338	17,088,005	...	3,395,899	12,446,008	...

¹ Commonly known as Alaska fur seal; value figures are the net returns to the Federal Government for pelts sold.

Fur Farm Production.—Mink accounts for about 99 p.c. of the total value of fur farm production. In 1967 the number of mink pelts taken continued upward, reaching 1,972,219 with a value of \$22,847,407.

On the whole, there was little change in the number of fur farms operating in 1967 compared with 1966, some provinces reporting small increases and others small decreases. Mink farms decreased in number from 1,469 to 1,364 but the number of animals on those farms at year-end was 652,529 compared with 740,986 a year earlier. Chinchilla farms increased in number from 653 to 938 and the number of animals from 65,316 to 73,079. In 1967, 49 farms raising nutria reported 2,115 animals and 40 farms raising fox had 1,029 animals, both moderate decreases over the previous year.

4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1965-67

Province	Fur Farms at Year-End			Value of Pelts Produced on Fur Farms		
	1965	1966	1967	1965	1966	1967
	No.	No.	No.	\$'000	\$'000	\$'000
Newfoundland.....	33	24	19	506	441	234
Prince Edward Island.....	16	19	18	99	73	106
Nova Scotia.....	148	162	190	1,656	1,295	1,431
New Brunswick.....	32	35	35	157	111	142
Quebec.....	141	140	139	1,878	1,627	1,782
Ontario.....	759	723	841	8,042	6,919	7,166
Manitoba.....	184	190	171	4,367	3,382	3,105
Saskatchewan.....	135	121	199	1,727	1,397	1,342
Alberta.....	281	326	328	3,488	2,512	2,513
British Columbia.....	424	463	442	6,615	4,974	5,266
Totals.....	2,153	2,203	2,382	28,535¹	22,731¹	23,087¹

¹ Includes value of some pelts not allocated by province.

5.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1965-67

Kind	1965		1966		1967	
	Pelts	Value	Pelts	Value	Pelts	Value
	'000	\$'000	'000	\$'000	'000	\$'000
Mink.....	1,624	28,279	1,811	22,472	1,972	22,847
Standard.....	452	7,529	472	5,460	478	6,014
Grey.....	84	669	45	522	44	467
Dark blue.....	60	1,240	65	889	82	788
Light blue.....	241	5,785	292	4,501	343	4,710
Brown.....	618	8,766	685	7,597	716	7,227
Beige.....	172	3,412	195	2,821	231	2,905
White.....	47	938	57	742	78	736
Chinchilla.....	17	226	19	227	18	194
Fox.....	1	28	1	30	1	44
Nutria.....	1	2	1	2	1	2
Totals.....	1,643	28,535	1,832	22,731	1,992	23,087

Exports and Imports.—The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being by far the most valuable followed by beaver, muskrat, fox, and seal. Mink, Persian lamb, dressed seal, dressed sheep and lamb, fox, and raccoon make up a large part of the imports. Exports and imports of furs, undressed, dressed and manufactured, to and from Britain, the United States and all countries, are given for the years 1966 and 1967 in Table 6.

6.—Exports and Imports of Furs, by Kind, 1966 and 1967

Kind of Fur	1966			1967		
	Britain	United States	All Countries	Britain	United States	All Countries
EXPORTS						
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Undressed—						
Beaver.....	937	2,636	5,329	1,377	2,364	5,534
Chinchilla.....	—	311	311	—	245	245
Ermine or weasel.....	160	53	217	138	71	212
Fisher.....	29	80	123	17	26	53
Fox, all types.....	81	732	954	56	859	1,041
Lynx.....	70	242	328	49	144	199
Marten.....	90	421	525	88	260	362
Mink.....	1,786	12,806	19,764	1,367	13,958	19,064
Muskrat.....	2,187	167	2,462	1,176	68	1,309
Otter.....	38	60	209	20	59	138
Rabbit.....	—	33	37	—	34	34
Seal.....	818	5	1,374	674	14	1,200
Squirrel.....	545	1	548	439	—	439
Wolf.....	50	52	104	33	55	91
Other.....	88	131	300	56	152	275
Dressed—						
Mink.....	7	46	193	26	55	302
Raccoon.....	—	324	342	—	188	188
Fur plates, mats, etc.....	11	3	20	1	4	15
Other.....	136	1,175	2,263	38	829	1,450
Fur goods apparel.....	1,891	2,002	9,260	2,187	1,664	10,161
Totals.....	8,924	21,280	44,663	7,690	21,049	42,312
IMPORTS						
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Undressed—						
China and Jap mink.....	111	14	644	29	—	123
Fox.....	1,435	338	2,464	413	152	1,327
Kolinsky.....	157	21	336	24	2	120
Mink.....	1,787	2,835	10,228	927	2,748	9,951
Muskrat.....	—	1,090	1,090	—	543	543
Persian lamb.....	262	1,018	2,424	297	684	2,380
Rabbit.....	—	89	202	5	20	94
Raccoon.....	—	1,371	1,380	4	1,343	1,346
Other.....	84	1,048	1,400	89	859	1,487
Dressed—						
Hatters' furs.....	—	323	592	38	305	570
Mink.....	16	636	658	14	625	680
Seal.....	20	2,143	2,407	11	1,999	2,380
Sheep and lamb.....	265	230	1,469	297	308	1,685
Fur plates, mats, etc.....	97	535	1,015	23	457	721
Other.....	318	564	1,154	242	585	1,195
Fur goods apparel.....	42	129	388	55	152	540
Totals.....	4,594	12,384	27,851	2,468	10,782	25,142

Subsection 2.—The Fur Processing Industry

The general term "fur processing" includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves. Tables 7 and 8 give selected statistics for these industries on the "total activity" basis (see Chapter XVI on Manufactures) for 1964-66. In 1966, the fur dressing and dyeing industry processed the following major types of pelts: mink (all types) 1,729,076, muskrat 1,119,078, raccoon 504,322 and rabbit 449,978. Comparable figures for 1965 were 1,473,336, 868,811, 850,576 and 234,828, respectively.

7.—Principal Statistics of the Fur Dressing and Dyeing Industry, 1964-66

Item		1964	1965	1966
Establishments.....	No.	16	17	15
Administrative and Other Salaried Employees—				
Male.....	No.	84	85	82
Female.....	"	23	25	22
Salaries paid.....	\$'000	670	780	821
Production and Related Employees—				
Male.....	No.	641	689	612
Female.....	"	121	129	105
Wages paid.....	\$'000	3,155	3,469	3,263
Cost of materials used in manufacturing.....	\$'000	1,088	1,696	1,433
Pelts treated.....	'000	4,832	5,219	5,264
Amount received for treatment of furs and other manufacturing revenue..	\$'000	6,559	7,927	6,953

8.—Principal Statistics of the Fur Goods Industry, 1964-66

Item		1964	1965	1966
Establishments.....	No.	433	406	406
Administrative and Other Salaried Employees—				
Male.....	No.	448	465	422
Female.....	"	183	179	156
Salaries paid.....	\$'000	3,493	3,506	3,516
Production and Related Employees—				
Male.....	No.	1,596	1,454	1,418
Female.....	"	804	727	699
Wages paid.....	\$'000	9,573	9,552	9,624
Cost of materials used in manufacturing.....	\$'000	39,661	41,218	42,186
Value of factory shipments and other manufacturing revenue.....	\$'000	62,536	64,707	65,963
Total revenue.....	\$'000	64,515	66,892	67,942

Section 3.—Provincial and Territorial Fur Resource Management*

Most of the fur resources of the provinces and territories of Canada are under the administration of their respective governments. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Indian Affairs and Northern Development is responsible for all Federal Government interests in wildlife resources except for those related to Indian affairs, which are administered by the Indian Affairs Branch of the same Department. The Canadian Wildlife

* Prepared by the respective provincial and federal departments responsible for fur resource management.

Service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems (see pp. 42-45). Provincial fur resource management practices are discussed in the following paragraphs.

Newfoundland.—The wild fur industry in Newfoundland, as elsewhere, has been characterized by short-term instability and long-term decline. In general, the price of furs has declined in the past decade and, since the supply of trappers is partially determined by the profit motive, the number of trappers has also declined. As a result, the fur bearers of the province are now considered to be under-harvested. Because trapping is no longer profitable for the casual trapper and only large harvests and excellent pelt preparation can repay a trapper for his effort, the maintenance of trapping in Newfoundland requires that the resource be divided among a select group of professional trappers.

Research and management of the Newfoundland wild fur industry is at present in progress in an effort to exploit this resource more fully. Approximately one third of the beaver harvest was under trapline management in 1968 and the intention is to expand the system and include other fur bearers as well. One beaver per lodge is the limit, except where no trapline system is employed, and 10 beaver are permitted for each trapper. There is no limit on other fur bearers.

Between \$70,000 and \$90,000 worth of wild fur is harvested annually. The beaver harvest at about 3,000 is the main contributor, followed by otter with an annual catch of about 1,000. Fox, lynx and mink are about equally valuable, the latest harvest of each being valued at between \$6,000 and \$7,000.

Nova Scotia.—Nova Scotia's wild fur bearers include beaver, muskrat, mink, otter, fox, raccoon and weasel and the trapping of these animals provides supplementary income for several thousand persons who harvest from \$100,000 to \$200,000 worth of wild furs each year. The value, of course, depends on the numbers of each fur species available and on fur prices, both being subject to marked variations from year to year.

The beaver, once almost extinct in the province, is now the most available fur bearer taken. A \$2 licence is required by residents to trap a limited number of beavers (five to 20) during the approximately 10-week season beginning Nov. 1. No licence is required to trap other fur bearers, although a royalty must be paid to the province for each pelt exported. These animals may be taken between Nov. 1 and Jan. 15.

Beaver research is at present being carried on in Nova Scotia to increase knowledge of this valuable animal as a preparation for better management of its population. Behaviour, feeding, movement and reproduction studies are being conducted near the Tobieatic Wildlife Management Area in western Nova Scotia, in Cumberland County in the eastern part of the province and in Thomson Station Sanctuary in Queens County. In addition, data on size, age, parasites and diseases are collected from beaver carcasses taken by trappers in all parts of the province.

The Trappers' Association of Nova Scotia, composed of several trappers' associations throughout the province, has been organized so that the men closest to the fur resource may have some say in its wise use and management. It also assists in ensuring proper handling and marketing of the raw furs and in up-grading quality, thus commanding good market prices.

New Brunswick.—The initial investigation under the fur management program under way in New Brunswick concerned the muskrat and was conducted in the estuary of the St. John River, one of the better muskrat areas in the province. Investigation was later extended to other fur bearers, especially beaver. Beaver were protected against trapping for about 20 years until the first open season was declared in 1946. As a result, the beaver has made a remarkable recovery and there has been an open season each year since 1951, the annual take averaging from 7,000 to 10,000 pelts. At present, beaver damage done to farms and woodlots, highways and railways is causing concern.

The trapping of fisher and marten was permitted during the 1964-65 trapping season for the first time since 1946. These animals are found mainly in the northern part of the province but their numbers appear to be increasing and they are gradually working their way southward. During the winters of 1966, 1967 and 1968, a number of fisher were live-trapped in northern New Brunswick and released in the Fundy Mountains in an attempt to re-establish them there. Mink and otter are not abundant but in the fall trapping season the catches average from 1,500 to 2,000 and from 200 to 250, respectively. In 1966-67, 4,108 trapping licenses were issued.

Provincial legislation enables quick changes to be made in trapping seasons; thus, the autumn benefit of available fur may be utilized by a trapper or a closed season established on any fur bearer showing signs of serious depletion in numbers. A summary of trapping laws, which includes information on how the different pelts should be handled to receive the best price, is available from the Fish and Wildlife Branch of the provincial Department of Natural Resources.

Quebec.—The fur trade has been of considerable importance in Quebec since the beginning of New France and the province has remained in the forefront of fur producers. The principal native species, in order of value in 1967-68, were beaver, white fox, muskrat, mink, lynx, seal, otter and marten.

Management of wild fur bearers began in 1932 with the establishment by an official of the Hudson's Bay Company of a privately leased reserve at Rupert House. The administration of this reserve passed to the Hudson's Bay Company and a second concession, at Nottoway, was granted to the Company in 1938. Strict conservation practices were enforced in these two reserves with such success that the provincial government took over their management and has since added steadily to the area of Crown lands set aside for Indian trappers. At present, 12 reserves are under conservation: Rupert House, 7,500 sq. miles (1932); Nottoway, 11,300 sq. miles (1938); Vieux Comptoir, 30,000 sq. miles (1941); Peribonca, 12,600 sq. miles (1941); Fort George, 17,700 sq. miles (1942); Abitibi, 6,000 sq. miles (1943); Great Victoria Lake, 6,300 sq. miles (1948); Mistassini, 50,000 sq. miles (1948); Manouane, 5,000 sq. miles (1951); Roberval, 20,000 sq. miles (1951); Bersimis, 21,000 sq. miles (1951); and Saguenay, 140,000 sq. miles (1955).

A separate system of registered lands for white trappers is operated in the areas of Abitibi East, Abitibi West, Rouyn-Noranda, Témiscamingue, Pontiac and part of Saguenay County. Each leaseholder is granted exclusive trapping rights on his assigned land and each is subject to strict regulation. The trapping of fur bearers, other than beaver, is not restricted on either the reserves or the registered lands except for a general regulation concerning the protection of animals and the fixing of catch limits. Biological research has been undertaken to assess the results of this system.

In 1967-68, the value of the catch of wild furs in Quebec amounted to \$2,078,048—a fraction of the value of the finished product.

Ontario.—Legislation for the management of wild fur bearers had its beginning in Ontario with the setting of seasons in 1860 by an Act of Upper Canada. However, 32 years passed before there was any field staff to enforce the regulations and then began an era of restrictive legislation to protect species threatened by the earlier exploitation. Progress beyond the restrictive enforcement of open and closed seasons has come about only in the past 20 or 30 years. The first steps in this direction involved the setting aside of special Indian hunting areas in which non-Indians were not allowed to trap.

The registered trapline system was introduced in 1935 on a very small scale. This system is based on government recognition of the desirability of full utilization of the resource and the more efficient management that results when one individual enjoys the exclusive right to trap on such an area. In its early stages, surveyed townships were assigned as trapline areas but more explicit trapline boundaries, established in 1947-48, now cover the province and mostly follow natural physiographical features. At the same time,

resident traplines were established in areas of patented land, which means most of southern Ontario; these are blocks of land on which trappers are licensed to trap, providing they make their own written agreements with the landowners. Trapline licences are renewable annually as long as the trapper meets the conditions of the regulations and continues to trap. Trappers may sell the equipment and improvements they have made on their lines and thus have a vested interest in their traplines.

In full realization that fur is a natural resource that cannot in nature be stockpiled, and is harvested on a commercial basis only, the Ontario Department of Lands and Forests has assisted the Ontario Trappers' Association to establish their fur auction at North Bay. This allows the trappers to sell furs on a competitive market and realize their full value.

Much valuable research has been carried out on fur bearers, with present emphasis on beaver and otter. Transplantings have been successfully carried out to speed the recovery of reduced populations, particularly with beaver. A new aging technique was perfected for beaver a few years ago and recently an aerial beaver survey technique has been developed.

Manitoba.—Trapping and trading in furs is Manitoba's oldest industry and the province produces some of the finest pelts on the world markets. The annual value of the wild fur produced averages around \$1,650,000.

When the registered traplines were established nearly 30 years ago, indiscriminate and illegal trapping was eliminated, thus protecting both fur bearing animals and trapline operators. The use of power snow toboggans now enables the trapper to cover his line more thoroughly and in less time and therefore to handle a larger territory. The Department has been striving to enlarge and increase the individual trapline so that trappers may earn more money to compensate for the rising cost of living. The once-scarce beaver has been rehabilitated through years of controlled and managed harvest; there were 38,128 beaver pelts taken between July 1967 and June 1968. A live transplant project has undertaken to re-stock areas where beaver and marten have become depleted. During the past decade new records in the production of muskrat, mink, lynx, fisher and otter have been established.

The wild fur industry is still of economic importance in Manitoba, particularly so for both white and native trappers in the northern areas as well as for many part-time trappers in southern Manitoba. A trapper education program was started in 1957 to improve the general handling of furs by trappers and to achieve a certain measure of standardization in pelt care. This program has shown gratifying results and has been expanded to include improved trapping methods and the use of humane trap sets. A booklet, *The Trappers' Guide*, is available from the Wildlife Branch, or the Conservation Education Section of the provincial Department of Mines and Natural Resources.

Manitoba works in close co-operation with federal and other provincial agencies in the promotion of quality furs by exhibiting collections of representative wild furs at the more important European fairs. A Winnipeg fur auction company, one of the largest in Western Canada, serves as an important fur selling and exporting agency for Manitoba trappers and fur dealers with buyers attending from a number of European fur centres, from the United States and from Eastern Canada. More than \$8,000,000 worth of Manitoba wild furs were exported during the 1966-67 fur season.

Saskatchewan.—Before 1945, little was done to control the trapping of beaver and muskrat in Saskatchewan, other than to establish closed seasons when the fur bearers became depleted from over-trapping, and the lack of a conservation and management policy had a disastrous effect on both the fur resources and the livelihood of trappers. In 1944, the provincial government set up a committee to study trapping problems and the following year the South Saskatchewan Muskrat Trapping Program was instituted. Under this plan, individuals received exclusive rights to trap on definite land locations. Owners and occupants received first consideration, with special priority given to Indians and metis on Crown lands. Muskrat quotas were established to assure continuing populations, and marketing of pelts under government supervision was instituted.

In 1946, under federal-provincial agreement, all Crown lands north of the 53rd parallel were set up as the Northern Fur Conservation Block. Up to \$50,000 a year was to be expended over the following ten years to establish and administer conservation areas, purchase equipment, pay salaries of personnel, transplant live beaver and build dams; the Federal Government agreed to assume 60 p.c. of the cost and the province the remainder. A Fur Advisory Committee, with representation from the provincial Department of Natural Resources and the federal Indian Affairs Branch was set up to supervise the program. Organization of conservation areas was left to the trappers. Five-man councils were elected in all districts, with Indian, metis and white trappers sharing privileges, obligations and responsibilities on an equal basis. Conservation measures and licensing regulations were initiated. In 1956 the agreement was extended for another ten years with minor changes and in 1962 a co-ordinating body was set up by the Fur Advisory Committee to promote better communications and understanding of the fur program. In 1966 the agreement was again extended until 1972. The northern fur conservation program in Saskatchewan has served as an important vehicle to encourage these people to plan and carry out other programs vital to their own well-being.

During the two decades of the province's fur program, security of trappers has been strengthened; fur bearer population has reached a higher general level, particularly of beaver; quotas have put trapping on a sustained-yield basis; poaching has been almost eliminated; higher water levels resulting from the comeback of beaver have improved the habitat for other wildlife; and Indian, metis and white trappers are sharing alike in the self-government of trapping areas and in fur management programs.

Alberta.—Plans have been formulated for the reorganization of the Fish and Wildlife Division of the provincial Department of Lands and Forests. Under the new set-up, a fur management section will be established to work strictly on the fur resources of the province. More meetings will be held with registered trappers to increase the exchange of information between them and the Division's officers and a more intensive program is being initiated to eliminate as far as possible the misuse of trapping areas by certain trappers and, by amalgamation, to form trapping areas into better economic units. The Alberta Government submits pelts to the main fur exhibits in Canada and Europe, a policy that has increased the interest of foreign and Canadian buyers in Alberta furs.

British Columbia.—The British Columbia wild fur resource is administered by the Fish and Wildlife Branch of the Department of Recreation and Conservation. Regulations are derived under authority of the Wildlife Act and resource use is controlled under the registered trapline system, in effect since 1926. Registered traplines are areas of Crown land allotted, for the purpose of trapping wild fur, to trappers who are resident in the province. Registration of a specific trapline is renewable on an annual basis by the trapper, subject to certain requirements of tenure aimed at conservation and sustained yield of fur species. Approximately 3,000 trappers are involved in provincial wild fur production, of whom one half are Indians. The market value of wild fur produced during the fur harvest of 1966-67 was \$671,061, with beaver, marten, squirrel and mink together comprising about 75 p.c. of the total value.

CHAPTER XIV.—MINES AND MINERALS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Canada's Mineral Industry*

Canada's Centennial Year, 1967, was one of record production by the mineral industry and was characterized by better-than-average growth of output both regionally and by commodity. Exploration for new deposits and development of properties for production were carried out on a wide scale. The value of production moved up 11 p.c. over 1966 and was one of the largest annual increases of recent years. The metalics sector accounted for about 60 p.c. of the increase, the industrial minerals, including structural materials and non-metallics, for 11 p.c., and the mineral fuels for 29 p.c.

Canada produces 61 different minerals. In point of value, the major minerals are crude petroleum, copper, nickel, iron ore, zinc, natural gas and asbestos; these seven accounted for 69 p.c. of the total output value in 1967. Canada continues to lead the world in production of nickel and zinc; is in second place in the production of asbestos, uranium and molybdenum; and stands high in the production of many other minerals including copper, gold, platinum group, potash, iron ore, lead, sulphur, gypsum, magnesium, silver, cadmium and cobalt.

The Canadian mineral industry is strongly export-oriented, with about 60 p.c. of its output going to foreign markets. It is the country's leading export sector and, since 1950, total mineral and metal exports have grown by 10.3 p.c. a year compared with 7.8 p.c. for merchandise exports as a whole. In 1967 mineral and metal exports were at an all-time high of \$3,470,000,000 compared with \$3,120,000,000 in 1966, and accounted for 31 p.c. of Canada's total merchandise exports. About 58 p.c. went to the United States, 15 p.c. to Britain, 8 p.c. to Japan, and 8 p.c. to countries of the European Common Market; the remainder had world-wide distribution. World markets remained generally strong in 1967 although there was evidence of over-supply and weakening demand for some commodities. Copper supply improved during the first half of the year from the severe shortage position of the previous year but, as a result of a strike against the major copper producers of the United States in July that continued until the end of the first

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quarter of 1968, there was again evidence of short supply as the year progressed and consequently prices rose. Nickel remained in short supply and under allocation in export markets during 1967 and there was not much possibility of this position being relieved until 1969 at the earliest. Silver prices rose from the statutory \$1.29 (U.S.) to over \$2.00 (U.S.) a troy ounce after the United States announced restrictions at mid-year on the release of silver from treasury stocks. Most other metal prices remained firm on world markets although there was some weakening of iron ore prices in Europe and Japan because of an abundant supply of good-grade ore from many sources. In the industrial minerals group, prices of asbestos and elemental sulphur were again higher, with sulphur being in a continuing short-supply position. Potash prices were lowered as supply became more readily available.

Canada's mineral output has grown dramatically over the years, particularly in the post-World War II period and has also become increasingly more diversified. Only in recent years has Canada become a large producer and exporter of molybdenum, potash and elemental sulphur and only within the past dozen years have production and exports of petroleum, natural gas, iron ore and uranium been of importance.

1.—Value of Mineral Production, 1886-1967

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Value per Capita
	\$	\$		\$	\$		\$	\$
1886.....	10,221,255	2.23	1935.....	312,344,457	28.84	1957.....	2,190,322,392	131.87
1890.....	16,763,353	3.51	1940.....	529,825,035	46.55	1958.....	2,100,739,038	122.99
1895.....	20,505,917	4.08	1945.....	498,755,181	41.31	1959.....	2,409,020,511	137.79
1900.....	64,420,877	12.15	1950 ¹	1,045,450,073	76.24	1960.....	2,492,509,981	139.48
1905.....	69,078,999	11.51	1951.....	1,245,483,595	88.90	1961.....	2,582,300,387	141.59
1910.....	106,823,623	15.29	1952.....	1,285,342,353	88.90	1962.....	2,850,986,179	153.42
1915.....	137,109,171	17.18	1953.....	1,336,303,503	90.02	1963.....	3,050,428,547	161.13
1920.....	227,859,665	26.63	1954.....	1,488,382,091	97.36	1964.....	3,390,971,534	175.79
1925.....	226,583,333	24.38	1955.....	1,795,310,796	114.37	1965.....	3,745,470,821	190.67
1930.....	279,873,578	27.42	1956.....	2,084,905,554	129.65	1966.....	3,972,780,919	198.49
						1967 ¹	4,403,579,072	215.81

¹ Value of Newfoundland production included from 1949.

The continuing growth of the mineral industry depends primarily upon Canada's competitive position in world mineral markets. Of equal importance is the continuing large-scale investment of capital for exploration and development and the expansion of existing production facilities. Capital and repair expenditures in mining, quarrying and oil wells in 1967 totalled \$1,270,000,000, slightly lower than in the previous year. The mineral industry continued its efforts to increase productivity by designing and operating mines on a large scale, taking advantage of the best mining and processing technology available and thus keeping unit costs to a minimum.

The record rise of \$431,000,000 in value of output in 1967 was due mainly to increases in the metallics and mineral fuels sectors. The largest gain was for copper which increased by 86,000 tons and \$110,000,000 in 1967 over 1966. The increase was attributable to production at the recently opened mine of Texas Gulf Sulphur Company near Timmins, Ont., and to increased output from the Ontario Sudbury district and from British Columbia mines. Nickel output was also substantially higher. There were smaller increases in the output of iron ore, zinc, silver and molybdenum. The value of lead production was unchanged and that of both gold and uranium continued to decline. Conditions in gold mining continued to be bleak in the face of rising costs and a fixed selling price but a reversal of the declining trend in uranium production is expected in 1969 as new sales contracts begin to come into force.

In the industrial mineral sector, output of non-metallics was valued at \$414,000,000 compared with \$363,400,000 in 1966. As in other recent years, the most significant developments in the non-metallic group in 1967 were related to production gains and new

developments for potash and sulphur. Potash production came from three underground mines and one mine operated by solution mining. Several other properties were being developed for production to begin in the years from 1968 into the 1970s. It is expected that Canada will become the world's largest potash producer in the 1970s from the extensive beds that underlie much of the southern third of Saskatchewan. They constitute the largest and highest-grade potash reserves in the world. Elemental sulphur recovered in natural gas processing plants is increasing as natural gas throughput rises. There has been a shortfall for many years between supply and demand of elemental sulphur. Asbestos fibre output at 1,400,000 tons was slightly less than in the previous year; in the Yukon Territory, one mine began production late in 1967 and a new asbestos property was under development west of Timmins, Ont. Output of most other non-metallics did not change significantly in 1967. Structural materials were valued at \$469,200,000 and were used almost entirely for domestic construction requirements.

The production of mineral fuels—crude petroleum, natural gas, natural gas liquids, and coal—was again at a record level, reaching a value of \$1,277,000,000, nearly 11 p.c. higher than the previous record of \$1,151,000,000 in 1966.

2.—Value of Mineral Production, by Class, 1958-67

Year	Metallics	Non-metallics	Fuels	Structural Materials	Total
	\$	\$	\$	\$	\$
1958.....	1,130,160,395	150,354,802	510,768,681	309,455,160	2,100,739,038
1959.....	1,370,648,535	178,216,641	535,577,823	324,577,512	2,409,020,511
1960.....	1,406,558,061	197,505,783	565,851,829	322,594,308	2,492,509,981
1961.....	1,387,159,036	210,467,786	653,327,802	331,345,763	2,582,300,387
1962.....	1,496,433,950	217,453,009	780,932,387	356,166,833	2,850,986,179
1963.....	1,509,536,931	253,452,413	908,428,087	379,011,116	3,050,428,547
1964.....	1,701,648,538	287,497,000	998,767,672	403,058,324	3,390,971,534
1965.....	1,907,575,899	327,238,901	1,076,494,117	434,161,904	3,745,470,821
1966.....	1,984,672,572 ^a	363,387,717	1,150,611,731	474,108,899	3,972,780,919 ^a
1967 ^p	2,243,392,166	414,006,283	1,276,950,500	469,230,123	4,403,579,072

The volume of mineral production index, which is a means of measuring the mining industry's absolute growth, increased by 6.4 p.c. in 1967, rising to 145.2 (1961=100) from the 1966 level of 136.5; the 1961-67 average annual rate of growth was 6.7 p.c. In comparison, the index of industrial production advanced by 1.9 p.c., rising to 151.7 from the 1966 level of 148.9; the average annual rate of growth from 1961-67 was 7.6 p.c.

3.—Quantity Indexes of Production of the Principal Mining Industries, 1958-67

(1961=100)

Mining Industry	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967 ^p
Metal Mines.....	95.5	110.0	107.3	100.0	101.1	103.9	120.6	124.5	125.0	133.8
Gold, placer and quartz.....	104.1	102.2	104.4	100.0	92.6	88.8	85.3	79.2	71.8	65.4
Iron.....	70.7	105.2	103.6	100.0	142.4	173.0	229.5	242.6	261.1	276.1
Miscellaneous.....	98.2	112.4	108.5	100.0	99.5	98.6	121.5	135.5	135.8	149.7
Non-metal Mines (except coal)...	80.3	92.0	91.5	100.0	109.3	121.9	138.7	161.8	179.2	192.8
Asbestos.....	79.8	86.4	90.3	100.0	103.4	109.2	118.9	123.4	134.7	130.6
Mineral Fuels.....	76.5	84.1	87.1	100.0	111.3	119.1	128.3	135.2	145.6	158.0
Coal.....	113.8	103.8	107.0	100.0	97.2	103.7	108.9	108.6	105.9	106.2
Crude petroleum and natural gas..	73.7	82.7	85.7	100.0	113.7	121.7	131.7	139.8	152.5	166.9
Totals, Mines (incl. Milling), Quarries and Oil Wells.....	86.0	97.3	97.4	100.0	104.8	110.6	124.9	131.6	136.5	145.2

4.—Quantity and Value of Mineral Production, 1966 and 1967

Mineral	1966		1967 ^P	
	Quantity	Value	Quantity	Value
Metallics.....	...	1,984,672,572	...	2,243,392,166
Antimony..... lb.	1,405,681	745,011	1,243,000	658,790
Bismuth..... "	525,659	1,971,886	542,336	2,040,558
Cadmium..... "	3,236,862	8,351,103	4,771,677	13,385,156
Calcium..... "	249,179	245,125	622,237	591,125
Cobalt..... "	3,511,169	7,107,963	3,305,709	6,796,800
Columbium (Cb ₂ O ₆)..... "	2,637,997	3,182,170	2,207,000	2,627,000
Copper..... "	1,012,152,458	453,523,980	1,184,598,295	563,513,408
Gold..... oz.t.	3,319,474	125,177,364	2,953,198	111,483,225
Indium..... "	...	...	...	...
Iron ore..... ton	40,690,723	431,659,083	41,303,421	455,242,942
Iron, remelt..... "	...	17,421,215	...	18,332,344
Lead..... lb.	601,244,120 ^r	89,827,072 ^r	643,125,137	90,057,520
Magnesium..... "	13,445,701	4,175,743	17,369,240	4,950,233
Mercury..... "	...	...	...	...
Molybdenum..... "	20,596,044	34,670,593	21,223,907	37,873,670
Nickel..... "	447,219,823	377,479,471	500,359,642	467,196,178
Platinum group..... oz.t.	396,059	32,370,064	403,270	34,586,996
Selenium..... lb.	575,482	2,791,087	752,221	3,467,155
Silver..... oz.t.	33,417,874	46,751,605	36,426,079	63,094,821
Tellurium..... lb.	72,239	469,553	82,098	530,379
Thorium..... "	87,393	210,528	117,388	222,983
Tin..... "	710,752	916,870	531,500	908,865
Tungsten (WO ₃)..... "	...	...	...	...
Uranium (U ₃ O ₈)..... "	7,863,690	54,334,787	7,448,471	49,237,508
Yttrium (Y ₂ O ₃)..... "	20,724	130,223	160,078	1,689,864
Zinc..... "	1,928,212,425	291,160,076	2,173,114,184	314,904,646
Non-metallics.....	...	363,387,717	...	414,006,283
Arsenious oxide..... lb.	701,537	35,610	600,000	27,000
Asbestos..... ton	1,489,055	163,654,863	1,400,708	163,011,249
Barite..... "	221,376	2,199,054	199,576	2,061,735
Diatomite..... "	70	3,755	...	...
Feldspar..... "	10,924	254,714	10,555	264,527
Fluorspar..... "	...	1,895,754	...	2,099,720
Gem stones..... lb.	11,633	13,225	4,230	23,060
Grindstone..... ton	5	1,500	10	3,000
Gypsum..... "	5,976,164	12,312,220	5,119,955	10,761,535
Helium..... Mcf.	...	...	...	...
Iron oxide..... ton	...	10,199	...	28,000
Lithia..... lb.	253,566	260,611	564,977	266,226
Magnetite dolomite and brucite..... ton	...	3,948,599	...	3,441,405
Mica..... lb.	540,720	18,415	...	...
Nepheline syenite..... ton	366,696	4,109,744	406,298	4,349,320
Nitrogen..... Mcf.	...	...	...	...
Peat moss..... ton	284,572	7,187,254	277,163	7,362,857
Potash (K ₂ O)..... "	1,990,053	62,664,666	2,578,200	77,346,000
Pyrite, pyrrhotite..... "	326,954	1,139,141	375,390	1,689,566
Quartz..... "	2,299,660	5,514,041	2,234,330	5,527,745
Salt..... "	4,492,034	23,846,188	5,301,958	28,622,306
Soapstone, talc, pyrophyllite..... "	70,144	1,036,450	59,400	919,000
Sodium sulphate..... "	405,314	6,471,795	425,033	6,615,494
Sulphur, in smelter gas..... "	500,338	6,050,750	482,614	5,860,631
Sulphur, elemental..... "	2,041,528	40,253,685	2,322,223	70,021,487
Titanium dioxide, etc..... "	...	20,505,484	...	23,704,420
Fuels.....	...	1,150,611,731	...	1,276,950,500
Coal..... ton	11,391,569	81,559,794	11,557,000	83,621,000
Natural gas..... Mcf.	1,341,833,195	177,631,340	1,465,371,500	198,228,000
Natural gas by-products..... bbl.	...	99,908,218	...	108,617,000
Petroleum, crude..... "	320,542,794	791,512,379	352,526,000	886,484,500
Structural Materials.....	...	474,108,899	...	469,230,123
Clay products..... "	...	42,956,085	...	43,549,419
Cement..... ton	8,930,552	156,300,622	7,714,356	146,401,454
Lime..... "	1,555,037	18,339,724	1,354,263	16,737,960
Sand and gravel..... "	217,238,710	151,525,102	221,903,000	158,129,000
Stone..... "	84,874,387	104,987,366	83,652,759	104,412,290
Grand Totals.....	...	3,972,780,919	...	4,403,579,072

5.—Percentage of the Total Value Contributed by Principal Minerals, 1958-67

Mineral	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967 ^p
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Metallies¹	53.8	56.9	56.5	53.7	52.5	49.5	50.2	50.9	50.0	50.9
Copper.....	8.3	9.7	10.6	9.9	9.9	9.3	9.6	10.2	11.4	12.8
Gold.....	7.4	6.2	6.3	6.1	5.5	5.0	4.3	3.6	3.2	2.5
Iron ore.....	6.0	8.0	7.0	7.3	9.2	10.3	11.9	11.0	10.9	10.3
Lead.....	2.0	1.6	1.8	1.8	1.5	1.5	1.6	2.4	2.3	2.0
Nickel.....	9.2	10.7	11.9	13.6	13.5	11.8	11.2	11.5	9.5	10.6
Platinum group.....	0.7	0.7	1.2	0.9	1.0	0.7	0.7	1.0	0.8	0.8
Silver.....	1.3	1.2	1.2	1.1	1.2	1.4	1.2	1.2	1.2	1.4
Uranium.....	13.3	13.7	10.8	7.6	5.5	4.5	2.5	1.7	1.4	1.1
Zinc.....	4.4	4.0	4.4	4.1	3.9	4.0	5.7	6.6	7.3	7.2
Non-metallies¹	7.2	7.4	7.9	8.2	7.6	8.3	8.4	8.7	9.1	9.4
Asbestos.....	4.4	4.5	4.9	5.0	4.6	4.5	4.3	3.9	4.1	3.7
Gypsum.....	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.2
Potash.....	—	0.1	—	—	0.1	0.7	0.9	1.5	1.6	1.8
Quartz.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Salt.....	0.7	0.7	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6
Sodium sulphate.....	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1
Sulphur in smelter gas.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Sulphur, elemental.....	0.1	0.1	0.2	0.3	0.3	0.4	0.6	0.7	1.0	1.6
Titanium dioxide, etc.....	0.3	0.4	0.5	0.6	0.4	0.5	0.6	0.6	0.5	0.5
Fuels	24.3	22.2	22.7	25.3	27.4	29.8	29.5	28.8	29.0	29.0
Coal.....	3.8	3.1	3.0	2.7	2.4	2.4	2.1	2.0	2.1	1.9
Natural gas.....	1.5	1.6	2.1	2.6	3.8	4.9	5.1	5.0	4.5	4.5
Petroleum.....	19.0	17.5	17.0	18.9	19.4	20.2	19.9	19.3	19.9	20.1
Structural Materials	14.7	13.5	12.9	12.8	12.5	12.4	11.9	11.6	11.9	10.7
Clay products.....	2.0	1.8	1.5	1.4	1.3	1.3	1.2	1.2	1.1	1.0
Cement.....	4.6	4.0	3.7	4.0	4.0	3.9	3.9	3.8	3.9	3.3
Lime.....	0.9	0.9	0.8	0.7	0.6	0.6	0.6	0.5	0.5	0.4
Sand and gravel.....	4.6	4.3	4.5	4.1	4.2	4.0	3.7	3.6	3.8	3.6
Stone.....	2.6	2.5	2.4	2.6	2.4	2.6	2.5	2.5	2.6	2.4
Grand Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Includes minor items not specified.

Provincial and Territorial Mineral Production in 1967

Ontario in 1967 again led all provinces in value of mineral production with an output worth \$1,193,000,000, 27.1 p.c. of Canada's total. Following in order were Alberta with 22.7 p.c., Quebec with 16.7 p.c., Saskatchewan with 8.4 p.c. and British Columbia with 8.2 p.c. All provinces and territories increased their mineral output in 1967 with the exception of Quebec, New Brunswick, Nova Scotia and Prince Edward Island. The largest increases in dollar value of production were in Ontario where copper and nickel output were substantially greater. Alberta where mineral fuels are the main commodity, Saskatchewan where potash production added significantly to the total mineral output of the province, and British Columbia where copper and molybdenum output increased.

6.—Value of Mineral Production, by Province, 1958-67

NOTE.—Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Newfound- land (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	\$	\$	\$	\$	\$	\$	\$
1958.....	64,994,754	—	62,706,891	16,275,971	365,706,489	789,601,868	57,217,569
1959.....	72,156,966	4,559,171	62,879,617	18,123,290	440,897,186	970,762,201	55,512,410
1960.....	86,637,123	1,172,587	65,453,531	17,072,739	446,202,726	983,104,412	58,702,697
1961.....	91,618,709	606,644	61,693,156	18,804,385	455,522,933	943,669,456	101,489,787
1962.....	101,858,960	677,906	61,651,093	21,811,575	519,453,166	913,342,174	158,932,169
1963.....	137,796,707	798,345	66,317,617	28,343,119	540,615,098	873,828,297	169,638,539
1964.....	182,152,656	831,283	66,073,596	48,676,712	684,583,430	904,582,694	173,872,576
1965.....	207,557,627	599,387	70,771,827	82,158,532	715,900,973	992,788,746	182,865,972
1966.....	244,020,086	2,756,780	85,416,974	90,221,237	762,944,986	957,857,765	179,241,152
1967 ^p	259,838,940	1,704,000	79,380,243	89,863,348	736,033,010	1,193,036,824	186,591,861

6.—Value of Mineral Production, by Province, 1958-67—concluded

Year	Saskatchewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada
	\$	\$	\$	\$	\$	\$
1958.....	209,940,966	345,939,248	151,149,136	12,310,756	24,895,390	2,100,739,038
1959.....	210,042,051	376,215,593	159,395,092	12,592,378	25,874,496	2,409,020,511
1960.....	212,093,225	395,344,010	186,261,646	13,330,198	27,135,087	2,492,509,981
1961.....	215,977,233	473,480,540	188,542,078	12,750,304	18,145,162	2,582,300,387
1962.....	240,653,502	566,502,703	235,428,135	13,137,730	17,537,066	2,850,986,179
1963.....	272,355,007	669,311,368	261,146,081	14,366,936	15,911,163	3,050,428,547
1964.....	292,373,974	735,896,463	268,659,305	15,204,103	18,064,742	3,390,971,534
1965.....	328,167,375	794,170,720	279,632,889	13,400,535	17,456,418	3,745,470,821
1966.....	349,303,729	846,678,462	331,143,633 ^r	11,975,757	111,220,178	3,972,780,919 ^r
1967 ^p	369,695,836	996,833,364	360,830,137	14,700,071	115,071,438	4,403,579,072

7.—Value of Metallics, Non-metallics, Fuels and Structural Materials Produced, by Province, 1966 and 1967

Year and Province or Territory	Metallics	Non-metallics	Fuels	Structural Materials	Totals
	\$	\$	\$	\$	\$
1966					
Newfoundland (incl. Labrador).....	225,338,474	12,973,669	—	5,707,943	244,020,086
Prince Edward Island.....	—	—	—	2,756,780	2,756,780
Nova Scotia.....	1,510,111	15,125,247	51,513,674	17,262,942	85,416,974
New Brunswick.....	69,386,294	1,894,992	8,005,535	10,934,416	90,221,237
Quebec.....	456,257,300	171,097,221	340	135,590,125	762,944,986
Ontario.....	732,411,604	23,708,791	10,176,099	191,561,271	957,857,765
Manitoba.....	142,775,326	2,636,725	12,956,474	20,872,627	179,241,152
Saskatchewan.....	41,039,443	71,983,326	224,832,870	11,448,090	349,303,729
Alberta.....	6,886	39,118,700	776,284,956	31,268,100	846,678,462
British Columbia.....	193,659,884 ^r	24,849,046	65,928,098	46,700,605	331,143,633 ^r
Yukon Territory.....	11,929,367	—	46,390	—	11,975,757
Northwest Territories.....	110,357,883	—	862,295	—	111,220,178
Canada, 1966.....	1,984,672,572^r	363,387,717	1,150,611,731	474,108,899	3,972,780,919^r
1967^p					
Newfoundland (incl. Labrador).....	241,826,668	13,724,046	—	4,288,226	259,838,940
Prince Edward Island.....	—	—	—	1,704,000	1,704,000
Nova Scotia.....	316,180	12,822,355	52,042,000	14,199,708	79,380,243
New Brunswick.....	67,622,776	2,101,195	7,775,500	12,363,877	89,863,348
Quebec.....	434,483,644	174,522,177	8,000	127,019,189	736,033,010
Ontario.....	963,121,757	28,696,601	9,778,000	191,440,466	1,193,036,824
Manitoba.....	149,060,687	2,992,222	13,894,500	20,644,452	186,591,861
Saskatchewan.....	44,723,665	87,218,181	224,386,000	13,367,990	369,695,836
Alberta.....	4,928	68,787,634	889,777,500	38,263,302	996,833,364
British Columbia.....	213,804,352	22,628,872	78,458,000	45,938,913	360,830,137
Yukon Territory.....	14,166,071	513,000	21,000	—	14,700,071
Northwest Territories.....	114,261,438	—	810,000	—	115,071,438
Canada, 1967.....	2,243,392,166	414,006,283	1,276,950,500	469,230,123	4,403,579,072

Newfoundland and Labrador.—Iron ore is by far the most important mineral in this province; its value in 1967 was 78 p.c. of provincial output totalling \$259,800,000. Iron Ore Company of Canada increased the annual capacity of its Carol concentrator from 7,000,000 to 10,000,000 long tons and that of its Carol pellet plant from 5,500,000 to 10,000,000 long tons. Other important minerals produced in the province are copper, zinc and lead. Although the Tilt Cove copper mine was closed, the loss of its output

was offset by the start of production at the Gull Pond mine near Badger. Consolidated Rambler Mines Limited completed expansion of its copper mine near Baie Verte. American Smelting and Refining Company, the largest producer of base metals in the province, operated its Buchans zinc-lead-copper-silver mine at normal levels. The total production of non-ferrous metals was valued at \$37,900,000, slightly more than in 1966. Output of asbestos, the principal non-metallic mineral of the province, rose to 63,000 tons from 57,100 tons in the previous year. A plant for the production of magnesium hydroxide and calcined magnesia products from sea water is planned for the Stephenville area.

Prince Edward Island and Nova Scotia.—Prince Edward Island's mineral production is confined to structural materials which had a value of \$1,704,000 in 1967, down considerably from the 1966 figure.

In Nova Scotia, the total value of mineral production at \$79,380,000 was also down from the 1966 total of \$85,417,000. The output of coal, which by value is the province's major mineral product, was about the same as in the previous year but the output of non-metallics, valued at \$12,822,000, was 15 p.c. lower. Gypsum and salt are the main minerals in the non-metallic group; they contributed \$7,100,000 and \$4,725,000, respectively, to the 1967 total.

The year 1967 marked the end of one period and the beginning of another for the Nova Scotia coal industry. During the past two decades, large coal markets were lost to competitive petroleum fuels and coal production costs rose steadily. The period was characterized also by rising financial assistance to the coal industry, mainly in the form of Federal Government subventions to assist the movement of coal to markets. However, in 1967 the Federal Government, in co-operation with the Government of Nova Scotia, established the Cape Breton Development Corporation to acquire, reorganize and manage the coal mining and related interests of Dominion Steel and Coal Corporation, Limited, as well as to help promote and finance the development of industry on Cape Breton Island with a view to redirecting the economy of the island from coal to other forms of economic endeavour. Under the agreement between the federal and provincial governments, the province also assumed complete responsibility for the independent coal mines of Nova Scotia.

New Brunswick.—New Brunswick's mineral output totalled \$89,900,000 in 1967, slightly less than in 1966. Metals accounted for three quarters of total output and the main source of metal production was the five mines of the Bathurst-Newcastle district, whose principal products, in order of value of output, were zinc, lead, copper and silver. One of the five, Nigadoo River Mines Limited, began production from a 1,000-ton-a-day mine and mill late in 1967. The province's first smelter began operations early in the year at Belledune near Bathurst, treating lead and zinc concentrates produced by Brunswick Mining and Smelting Corporation Limited, which operates two large mines. Smelter products are lead, zinc, silver, cadmium and sulphuric acid. Late in the year, facilities were completed at the smelter site for the production of phosphate fertilizers using imported phosphate rock. Production of mineral fuels, nearly all of it coal, was worth \$7,660,000 and that of structural materials \$12,364,000.

Quebec.—Quebec's mineral output declined by \$26,900,000 in 1967 to \$736,000,000. Quebec is the leading province in the production of asbestos, is second to Ontario in the production of copper and zinc, and second to Newfoundland in iron ore production. Copper was mined in many parts of the province and exploration and development of copper properties were carried out in the Gaspé Peninsula and other areas; a new copper mine was opened at Joutel, 50 miles south of Matagami. A major exploration program was in progress at the nickel property of New Quebec Raglan Mines Limited in the Ungava area. Zinc production declined from a value of \$88,500,000 in 1966 to \$70,400,000; annual capacity of the pellet plant at Pointe Noire was increased from

4,900,000 to 6,000,000 long tons. Two lode gold mines were closed during the year as well as the Wakefield magnesite plant which had operated since 1942, and output was interrupted in October at Canada's oldest operating molybdenum mine when a fire destroyed the mill of Molybdenite Corporation of Canada Limited at Lacorne. Many companies joined in the search for uranium mainly in the Johan Beetz and St. Siméon areas on the north shore of the St. Lawrence River and in the Mistassini area northeast of Chibougamau. Production at Quebec aluminum smelters was curtailed as a result of a lower-than-usual growth in world consumption of that product.

Quebec continues to lead all provinces in the production of non-metallics, output in 1967 being valued at \$174,500,000. Asbestos production, the most important in this group, amounted to 1,260,000 tons which was 90 p.c. of total Canadian output; it was valued at \$138,829,000 and came from the Eastern Townships where first production was recorded about 90 years ago. The Asbestos Hill development in the Ungava area was suspended pending a reappraisal of the property but the Chibougamau district plans were under way for an underground asbestos development program to assess fibre grade. Several other non-metallic minerals are produced in Quebec but the only one to have a value of more than \$3,400,000 in 1967 was titanium dioxide, made by the electric smelting of ilmenite at Sorel; its output was valued at \$23,704,000. The production of structural materials totalled \$127,000,000 in 1967, down somewhat from 1966.

Ontario.—In 1967 Ontario's mineral output made its largest annual gain in recent years, rising to \$1,193,000,000, an advance of \$235,000,000 over 1966. Almost the entire increase was in the metallics sector and was accounted for by increased output of nickel, copper, zinc, silver and, to a lesser extent, iron ore.

As for many years, nickel has led all metallics in value of production in Ontario; output in 1967 was worth \$351,900,000 compared with \$269,500,000 in the previous year. The non-communist world's two largest nickel companies—The International Nickel Company of Canada, Limited and Falconbridge Nickel Mines Limited—operated 16 mines, seven mills, three smelters, and a copper refinery, all in the Sudbury area, and International Nickel operated a nickel refinery at Port Colborne. For the recovery of nickel, Falconbridge ships nickel-copper matte to Kristiansand, Norway, from its Sudbury smelter. The two companies continued development of six new mines at Sudbury; International Nickel opened a 22,500-ton-a-day mill and Falconbridge had a new mill under construction.

Copper output rose substantially in 1967 as the Kidd Creek mine of Texas Gulf Sulphur Company completed its first full year of operation; the planned annual rate of production is 50,000 tons of copper, along with other non-ferrous metals. Substantial amounts of copper were produced also from the Sudbury nickel-copper ores, from copper-zinc ores at Manitouwadge and from several other parts of the province. Zinc output rose sharply in 1967 and Ontario became the largest zinc-producing province in the country. Production totalled 273,000 tons valued at \$79,000,000, compared with 82,000 tons valued at \$25,000,000 in 1966. This large increase was mainly accounted for by the production of the new Kidd Creek mine, the planned output of which is 250,000 tons of zinc annually. Silver production in Ontario is derived from silver ores in the Cobalt-Gowganda district, and from base metal mines throughout the province. Output in 1967 rose to 16,000,000 oz. from 11,000,000 oz. in 1966, the increase being largely due to by-product output at the new Kidd Creek mine. Gold production continued to decline and the number of lode gold mines operated decreased from 25 in 1966 to 21. Output of uranium has declined steadily since the peak year of 1959 but estimates of the quantities that will be required for the generation of electric power indicate a much higher rate of production for the years ahead. Exploration for uranium was carried on in Ontario during 1967, particularly in the Elliot Lake and Agnew Lake areas; Kerr Addison Mines Limited announced production plans at a rate of 3,000 tons of ore a day for the uranium

MINERAL REFERENCES



An oil-drilling rig near Fort McPherson, 60 miles north of the Arctic Circle.



The search for minerals has moved into the vast Canadian north-land. Canadian mining, exploration and oil companies, together with the Federal Government, have pooled their technological and financial resources in a gigantic arctic exploration program — for oil in the extremely promising regions of the Arctic Islands and for metals in the Coppermine River area of the mainland.



Geologists off for a day's magnetometer search in the Coppermine region.

deposit at Agnew Lake, 45 miles east of Elliot Lake, with operations scheduled to begin in 1971. Production of iron ore rose moderately in 1967 and was valued at \$95,200,000 compared with \$91,700,000 in the previous year. The Sherman Mine, near Temagami, was prepared for production of iron ore and the early shipment of pellets. Steep Rock Iron Mines Limited began production from its new pellet plant which has an annual capacity of 1,350,000 long tons, and the pellet plant of the Griffith Mine near Red Lake almost ready for production at year-end.

The province's output of non-metallics was valued at \$28,697,000 in 1967. Salt, nepheline syenite, sulphur and gypsum together contributed \$27,870,000 of that amount, structural materials \$191,440,000, about the same as in the previous year, and mineral fuels \$9,778,000; of the latter, natural gas contributed \$5,908,000 and crude petroleum the remainder.

Manitoba.—Mineral output in Manitoba was valued at \$186,592,000 in 1967, 4 p.c. more than in 1966. Of that amount, metallics accounted for \$149,061,000. Nickel was the principal mineral produced in the province, accounting for 70 p.c. of the metallics production and 56 p.c. of the total mineral production. It is produced by The International Nickel Company of Canada, Limited, the largest producer, at Thompson and by Sherritt Gordon Mines Limited at Lynn Lake. The Thompson complex is the world's only fully integrated nickel production facility; the mine, mill, smelter and refinery are being enlarged and three new mines near Thompson are scheduled for production by 1969. Sherritt Gordon operated a nickel refinery at Fort Saskatchewan in Alberta, where nickel and cobalt are recovered. Next in importance to nickel production are copper and zinc, which are recovered from ores mined at Flin Flon and Snow Lake by Hudson Bay Mining and Smelting Co., Limited. Concentrates are smelted by Hudson Bay at its Flin Flon custom metallurgical works. Hudson Bay continued its mine development program near Snow Lake, and Sherritt Gordon carried out further development of the Fox Lake copper-zinc deposit 30 miles southwest of Lynn Lake.

Crude petroleum production was valued at \$13,895,000 in 1967 compared with \$12,956,000 in 1966 and structural materials output, at \$20,644,000, remained about the same.

Saskatchewan.—Total value of mineral output in Saskatchewan in 1967 was \$663,696,000 compared with \$349,304,000 in the previous year. Mineral fuels contributed \$224,386,000 of that amount, non-metallics \$87,218,000, metallics \$44,724,000, and structural materials \$13,368,000. The year was highlighted by continuing expansion of potash production and development of new potash deposits. Three companies—International Minerals and Chemicals Corporation (IMC), Kalium Chemicals Limited, and Potash Company of America—operated at or near capacity and IMC brought its second mine on stream. Already the world's largest potash exporter, Canada is expected to become, within a few years, the world's largest producer as well. A record 2,578,200 tons of potash (K_2O) valued at \$77,346,000 were produced in 1967.

Saskatchewan copper production came from the Flin Flon mine of Hudson Bay Mining and Smelting Co., Limited, on the Manitoba-Saskatchewan boundary, from Anglo-Rouyn Mines Limited at Warden Bay, and from a 350-ton zinc-lead-copper mill at Hudson Lake that was opened in mid-year by Share Mines & Oils Limited. About 2,000,000 lb. of uranium valued at \$10,000,000 were produced by Eldorado Nuclear Limited from the Beaverlodge area in northern Saskatchewan and an expansion program was under way.

Alberta.—The value of mineral production in Alberta rose by \$150,000,000 to \$44,822,000 in 1967, with fuels accounting for almost 90 p.c. of the output and 75 p.c. of the year's increase. Alberta has long been Canada's leading oil-producing province,

contributing about 65 p.c. of the country's total output. Natural gas output also increased in 1967 to \$162,000,000 from \$146,200,000 in 1966; natural gas by-products, not including elemental sulphur recovered from gas, were valued at \$102,300,000 compared with \$94,100,000 in the previous year.

Oil and gas exploration activity was concentrated in the northwestern part of the province, particularly in the Zama Lake area where the same Middle Devonian producing horizons that occur in the Rainbow Lake pools immediately to the south were encountered but the productive zones appear more limited. The Great Canadian Oil Sands bituminous sands project near Fort McMurray was officially opened on Sept. 30. The \$235,000,000-plant is designed to process 100,000 tons of oil sands a day to produce 45,000 bbl. of high-grade synthetic crude oil. This oil is being delivered to Edmonton by pipeline and marketed in refineries in Eastern Canada and in the United States. Oil and gas pipeline construction was actively continued in the province. Most of the increase in elemental sulphur production in Canada came from expanded and new sour gas sulphur recovery facilities in this province. Sulphur recovery in the Great Canadian Oil Sands operations is expected to be about 330 tons a day.

With the exception of sulphur, there is little production of mineral commodities other than mineral fuels in Alberta. Of the \$68,788,000 worth of non-metallics produced in 1967, elemental sulphur accounted for \$66,600,000. Nearly all remaining mineral production was of the five structural materials.

British Columbia.—Mineral production in British Columbia in 1967 totalled \$360,830,000, 9 p.c. above that in the previous year; metallics output was valued at \$213,804,000, mineral fuels at \$78,458,000, and structural materials at \$45,939,000.

The rise in metallics output, which was mainly responsible for the increase in total mineral production, was accounted for to a large extent by increased copper production, which totalled 81,920 tons compared with 52,880 tons in the previous year. Three new mines and expansion of production at two producing mines contributed to the increase. Two large mines were being developed with production scheduled to begin in 1969, and several large low-grade properties were being explored in the province. British Columbia was a leading producer of lead and zinc, with output coming mainly from operations of Cominco Ltd. in the southeast part of the province, which include two lead-zinc mines and metallurgical-chemical plants for the production of refined metals, industrial chemicals and fertilizers. Molybdenum output came from four mines and accounted for 83 p.c. of Canada's total output of this mineral. The newest Canadian molybdenum producer, British Columbia Molybdenum Limited, started mill tune-up late in 1967 and was expected to have an annual output of 4,000,000 to 5,000,000 lb. British Columbia's production of molybdenum is expected to rise further in the years ahead when several large copper-molybdenum deposits, now under development, reach the production stage. Seven iron ore producers shipped 2,114,000 tons, all to Japan. Wesfrob Mines Ltd. opened a copper-iron ore mine and plant in the Queen Charlotte Islands, having an annual rated capacity of more than 1,000,000 tons of sinter and pellet concentrate. One of the two lode gold mines closed in 1967 and gold production was slightly lower.

Asbestos, produced at Cassiar in northern British Columbia, had a production value of \$13,365,000 and accounted for nearly 60 p.c. of the province's non-metallic output; most of the remainder was attributed to sulphur, recovered as sulphuric acid from lead-zinc smelting and from the processing of natural gas. Output of mineral fuels continued its upward trend in 1967, advancing to \$78,458,000 from \$65,928,000 in 1966. Drilling for oil and gas was carried on in British Columbia offshore areas.

Yukon and Northwest Territories.—Mineral output in Yukon Territory, valued at \$9,700,000 in 1967, was derived from the silver-lead-zinc mines of the Mayo district, from a copper mine near Whitehorse, from an asbestos mine west of Dawson, from placer

gold operations at Dawson, and from a small coal mine near Carmacks. The copper mine of New Imperial Mines Ltd. near Whitehorse began production in May at a rate of 2,500 tons a day. Anvil Mining Corporation Limited continued to develop its Faro deposit near Ross River, which contains some 63,000,000 tons of zinc-lead-silver ore; open-pit mining was scheduled to begin in late 1969 and construction of a 5,500-ton mill was under way. Sales contracts were negotiated with Japanese smelters for zinc and lead concentrates. Output by United Keno Hill Mines Limited at Mayo was at a reduced rate, causing the production of silver, lead and zinc in the Yukon to decline to about half the level of 1966. Cassiar Asbestos Corporation Limited began production at Clinton Creek late in 1967 and exploration of asbestos properties in this area is under way by other groups.

Mineral output in the Northwest Territories was valued in 1967 at \$115,071,000 and was accounted for largely by the production of zinc and lead at Pine Point, and gold in the Yellowknife area. Regular shipments of lead and zinc concentrates and high-grade ore were made by Pine Point Mines Limited and a new 3,000-ton-a-day addition to the mill was scheduled for completion in late 1968. One lode gold mine was to be closed at the end of 1967 or in early 1968.

A consortium of 20 companies in financial partnership with the Federal Government, under the name of Panarctic Oils Ltd., will carry out extensive geological and geophysical work in the Arctic Islands and will drill a number of wells in an oil exploration program over the three years 1968-70.

Subsection 1.—Metals

The metallic minerals of greatest dollar value to Canada in 1967 were, in order; copper, nickel, iron ore, zinc, gold, lead, silver, uranium, molybdenum and platinum group metals. These 10 metals, which accounted for 97 p.c. of the total value of metal production in 1967, and several other metals of importance are dealt with separately below.

Copper.—Production from new mines in New Brunswick, Quebec, Ontario, Saskatchewan, British Columbia and Yukon Territory, plus uninterrupted production at the established mines, raised copper output in 1967 to 592,300 tons valued at \$563,513,000, an increase of 86,200 tons and \$109,989,000 over 1966. Production of refined copper increased to 500,020 tons from 433,921 tons in the previous year but consumption declined 38,157 tons to 224,400 tons in 1967. Exports of copper in ores and concentrates increased by 34,088 tons to 128,976 tons; exports of refined copper rose by 85,228 tons to 275,919 tons.

Six smelters for the reduction of copper and nickel-copper ores and concentrates are operated in Canada. In the Sudbury district of Ontario, The International Nickel Company of Canada, Limited operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel Mines Limited produces nickel-copper matte at its Falconbridge smelter. Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., smelts ores and concentrates from its mines in Manitoba and Saskatchewan and custom ores and concentrates from mines in these provinces. Ores and concentrates from most of the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines Limited and the Murdochville smelter of Gaspé Copper Mines Limited, both in Quebec. Electrolytic copper refineries are operated by International Nickel at Copper Cliff, Ont., and by Canadian Copper Refiners Limited, a subsidiary of Noranda Mines, at Montreal East, Que.

Copper production in Newfoundland in 1967 was 19,689 tons valued at \$18,732,507, which was 295 tons and \$1,317,113 more than in 1966. Closure of Consolidated Rambler

Mines Limited's Main mine and First Maritime Mining Corporation Limited's Tilt Cove mine was offset by increased production from Consolidated Rambler's East mine and First Maritime's Gullbridge mine.

New Brunswick's copper output decreased to 5,608 tons valued at \$5,335,477 from 7,089 tons valued at \$6,366,203 in 1966. Nigadoo River Mines Limited started production in the fourth quarter from its lead-zinc-copper mine near Robertville.

Production of copper in Quebec was 159,088 tons valued at \$151,355,859, a decrease of 12,911 tons and \$3,098,768 from 1966. More than 25 mines were in operation during 1967, the main centres of production being at or near Noranda-Rouyn, Val d'Or, Matagami, Chibougamau, Murdochville, and Stratford Place. The East Sullivan mine near Val d'Or and the Bruneau mine near Chibougamau were closed during 1967. New mines were opened by Joutel Copper Mines Limited, by Grandroy Mines Limited, and by the Icon Syndicate. Three deposits were under development during 1967, one each in the districts of Chibougamau, Stratford Place, and Gaspé Provincial Park.

Copper was produced in Ontario at more than 30 mines in 1967, the main operations being the 17 nickel-copper mines of the Sudbury district, five copper-zinc and copper mines near Timmins, and three copper-zinc mines near Manitouwadge. Production from the recently opened Kidd Creek mine of Ecstall Mining Limited, a wholly owned subsidiary of Texas Gulf Sulphur Company, near Timmins, and greater output from the Sudbury-area mines of International Nickel accounted for most of the increase of 66,879 tons in Ontario's production, which rose to 269,855 tons in 1967; the value increased by \$75,364,417 to \$256,739,969. Two new mines were opened during the year and seven mines are scheduled to begin production by the end of 1972, which ensures that, for many years, Ontario will maintain a leading position among the provinces as a copper producer.

Manitoba's production of 29,459 tons of copper valued at \$28,027,719 was mostly from the mines of Hudson Bay Mining and Smelting Co., Limited at Flin Flon and Snow Lake and, to a smaller extent, from the Lynn Lake nickel-copper mine of Sherritt Gordon Mines Limited. Hudson Bay operated four mines and continued development of the Anderson Lake and Osborne Lake mines for production in 1968. Sherritt Gordon planned to start production from its Fox Lake copper-zinc mine in 1969 at a rate of 3,000 tons of ore daily. Copper rejects from the International Nickel refinery at Thompson were shipped to Copper Cliff, Ont., for refining.

Copper production in Saskatchewan was from the mine of Anglo-Rouyn Mines Limited at Waden Bay, that of Share Mines & Oils Limited at Hanson Lake, and from the Saskatchewan portion of Hudson Bay's Flin Flon orebody, which straddles the provincial boundary. Production in 1967 was 22,738 tons, 3,177 tons more than in 1966; the value was \$21,632,992, or \$4,067,316 higher. Hudson Bay continued development of the Flexar mine for production in 1968, and Share Mines & Oils explored and developed the Quandt property, near Hanson Lake.

Production in British Columbia increased by 55 p.c. in 1967 to 81,921 tons, valued at \$77,939,139. Three new mines began operation during the year—one at Buttle Lake, Vancouver Island, one at Babine Lake in the Smithers area, and one at Tasu Harbour, Queen Charlotte Islands. Two established producers, Craigmont Mines Limited at Merritt, and Bethlehem Copper Corporation Ltd. in the Highland Valley, had higher production in 1967 than in 1966. Granduc Mines Limited near Stewart, and Brenda Mines Limited near Peachland planned to start production in 1969 at rates of 7,000 tons and 24,000 tons of ore daily. Many large, low-grade copper deposits were explored in British Columbia during 1967.

Production of copper in the Yukon Territory resumed after a lapse of four years when New Imperial Mines Limited started production from its open-pit mine near Whitehorse; 3,675 tons were produced in 1967 valued at \$3,496,395.

9.—Producers' Shipments of Copper, by Province, and Total Value 1958-67

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
1958.....	14,751	—	328	131,445	142,035	12,601
1959.....	14,989	—	—	134,912	188,272	12,945
1960.....	13,863	—	—	157,470	206,272	12,793
1961.....	16,752	—	—	149,007	211,647	12,454
1962.....	17,308	204	3,674	147,431	188,995	12,738
1963.....	14,012	237	8,964	141,400	178,960	16,980
1964.....	13,615	204	9,296	158,088	197,917	29,777
1965.....	14,823	187	10,082	173,938	216,272	30,808
1966.....	19,393	115	7,089	171,998	202,976	31,315
1967P.....	19,689	40	5,608	159,088	269,855	29,459

	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
	tons	tons	tons	tons	Quantity	Value
	tons	tons	tons	tons	tons	\$
1958.....	37,510	6,010	—	434	345,114	174,430,930
1959.....	35,536	8,121	—	494	395,269	233,102,813
1960.....	31,785	16,559	—	520	439,262	264,846,637
1961.....	33,479	15,845	440	463	439,087	255,157,626
1962.....	32,017	54,489	215	314	457,385	282,732,696
1963.....	29,772	62,218	—	16	452,559	284,403,710
1964.....	20,442	57,561	—	—	486,900	324,467,834
1965.....	18,732	42,565	—	471	507,878	380,951,781
1966.....	19,561	52,880	—	748	506,076	453,523,980
1967P.....	22,738	81,921	3,675	226	592,299	563,513,408

Nickel.—Canadian nickel production in 1967 amounted to 250,180 tons valued at \$467,196,000, a 12-p.c. increase in quantity and a 24-p.c. increase in value over 1966. Canada, the world's leading producer, supplied 68 p.c. of the non-communist world's nickel in 1967. A continued shortage of supply in the non-communist world slowed consumption in 1967 to 412,500 tons from 415,000 tons in 1966.

In Ontario, where 76 p.c. of Canada's nickel was produced, International Nickel operated nine underground mines, one open-pit mine, four mills, two smelters, a copper refinery and an iron ore recovery plant in the Sudbury area, and a nickel refinery at Port Colborne. The company continued development of four new mines in the Sudbury area and explored and carried out development on an orebody near Shebandowan. Falconbridge Nickel operated six mines, three mills and a smelter, and continued the development of two new mines and the construction of a new mill in the Sudbury area. Kidd Copper Mines Limited leased and operated the Aer Nickel property near Worthington. Nickel-copper concentrates were shipped to Falconbridge for smelting. At Werner Lake in northwestern Ontario, Consolidated Canadian Faraday Limited (of which Metal Mines Limited, the former operator at Werner Lake, is now a part) continued production at about 600 tons of ore a day and sold a bulk nickel-copper concentrate to International Nickel.

In Manitoba, where 22 p.c. of Canada's nickel was produced, International Nickel operated an integrated nickel mining-concentrating-smelting-refining facility at Thompson and continued development of three new mines. Sherritt Gordon Mines Limited at Lynn Lake produced nickel concentrates for shipment to the company's chemical refinery at Fort Saskatchewan, Alta. Supplementary feed for the refinery was obtained by importing nickel-sulphide concentrates from Australia and nickel matte from New Caledonia.

Two small nickel mines were in production in Quebec in 1967. Marbridge Mines Limited operated a mine and mill near Malartic on a salvage basis and shipped a bulk, nickel-copper concentrate to the Falconbridge Sudbury smelter. Lorraine Mining Company Limited, near Belletre, continued mining and exploration at its nickel-copper mine. A bulk concentrate was shipped to the International Nickel smelter at Copper Cliff for treatment. In British Columbia, Giant Mascot Mines Limited, near Hope, produced a bulk nickel-copper concentrate for export to Japan.

The Canadian price of refined nickel in 1967 was raised to 101.5 cents a pound from 92.15 cents a pound in 1966. In the United States the price was raised from 85.25 cents a pound to 94 cents.

10.—Producers' Shipments of Nickel, by Province, and Total Value 1958-67

Year	Quebec	Ontario	Manitoba	British Columbia	Northwest Territories	Canada	
						Quantity	Value
	tons	tons	tons	tons	tons	tons	\$
1958.....	—	127,144	9,778	704	1,933	139,559	194,142,019
1959.....	—	173,964	10,139	531	1,921	186,555	257,008,801
1960.....	—	201,650	9,059	1,890	1,907	214,506	295,640,279
1961.....	—	196,218	32,978	2,090	1,705	232,991	351,261,720
1962.....	1,540	166,582	61,482	1,738	900	232,242	383,784,622
1963.....	2,506	149,089	63,585	1,850	—	217,030	360,892,658
1964.....	2,338	162,094	62,365	1,699	—	228,496	379,320,510
1965.....	3,026	191,283	63,212	1,661	—	259,182	430,402,105
1966.....	3,975	160,214	57,812	1,594	—	223,610 ¹	377,479,471
1967 ²	1,679	190,684	55,543	2,112	—	250,180 ²	467,196,178

¹ Includes 15 tons of producers' shipments in Saskatchewan.

² Includes 162 tons of producers' shipments

Iron Ore.*—Iron ore shipments in 1967 amounted to 36,878,049 long tons, an all-time high valued at \$455,242,942. Newfoundland-Labrador was the largest producing province with an output of 14,526,783 tons, followed by Quebec with 12,962,498 tons, Ontario with 7,501,110 tons, and British Columbia with 1,887,658 tons. Fifteen companies were directly engaged in iron ore mining—one in Labrador, one with mines in both Labrador and Quebec, two in Quebec, six in Ontario and five in British Columbia. In addition, four companies shipped iron ore as a by-product of base metal operations.

The Iron Ore Company of Canada, with operations in both Labrador and Quebec, completed an expansion program to increase annual capacity at its Labrador City concentrator from 7,000,000 to 10,000,000 tons and annual capacity at its pellet plant from 5,500,000 to 10,000,000 tons. Wabush Mines, which operates mines in Labrador, continued the expansion of its concentrator at Wabush from 5,300,000 to 6,000,000 tons annually and of its pellet plant at Pointe Noire, Que., from 4,900,000 tons to 6,000,000 tons. In Ontario, Steep Rock Iron Mines began production at its new 1,350,000-ton-a-year pellet plant. Construction of two pellet plants, by the Griffith Mine at Bruce Lake and the Sherman Mine at Temagami, neared completion at year-end. The plants have annual rated capacities of 1,500,000 and 1,000,000 tons, respectively. In British Columbia, Wesfrob Mines Limited began production at its iron-copper property in the Queen Charlotte Islands; annual rated capacity of its concentrator is 400,000 tons of sinter feed and 550,000 tons of pellet feed. Empire Development Company, Limited and Orecan Mines Limited, both on Vancouver Island, ceased production.

* Quantities of iron ore and concentrates given in the text are in long tons of 2,240 lb.; quantities shown in Table 11 are in short tons of 2,000 lb.

Iron Ore Company of Canada, with direct-shipping ore from deposits on both sides of the Labrador-Quebec border at Schefferville and a concentrating-grade deposit near Labrador City, is the largest shipper of iron ore in Canada, accounting for 38 p.c. of 1967 shipments. Quebec Cartier Mining Company accounted for 22 p.c. and other shippers were Wabush Mines in Labrador; Hilton Mines Ltd. in Quebec; and Algoma Ore Division of the Algoma Steel Corporation, Limited, Steep Rock Iron Mines Ltd., Caland Ore Company Ltd., National Steel Corporation of Canada, Marmoraton Mining Company, and Adams Mine (Jones & Laughlin Mining Co. Ltd.) in Ontario. In British Columbia, five companies shipped iron ore—Brynnor Mines Limited, Jedway Iron Ore Limited, Texada Mines Ltd., Wesfrob Mines Limited, and Zeballos Iron Mines Limited. By-product iron ore producers were Cominco Ltd. and Coast Copper Company Limited in British Columbia, and International Nickel and Falconbridge in Ontario.

Annual iron ore production capacity in Canada at the end of 1967 reached 46,000,000 tons, including 21,400,000 tons of pellet capacity. Upon completion of the Griffith Mine and the Sherman Mine and the expansion of Wabush Mines, pellet capacity will reach 25,000,000 tons in 1968.

Canada is the world's leading iron ore exporter, the four major market areas being United States, Western Europe, Britain and Japan. Exports totalled 31,407,000 tons in 1967 compared with 30,694,000 tons in 1966. The United States is the largest market, although Canadian exports to that country declined 3.2 p.c. to 23,500,000 tons in 1967; shipments to Britain, after declining for two consecutive years, increased by 29 p.c. to 2,870,000 tons; sales to Western Europe rose 36 p.c. to 3,400,000 tons; and exports to Japan fell 3.5 p.c. to 1,630,000 tons. Canadian indicated consumption was 8,796,000 tons, down from 9,363,000 tons in 1966, and imports amounted to 2,400,000 tons, down 45 p.c. Lower domestic consumption reflected reduced iron and steel production and increased iron content of iron ores. Almost all the imported ore came from Michigan and Minnesota in the United States; some was imported from Brazil and Liberia.

11.—Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1958-67

(Quantities are in short tons)

Year	Iron Ore Shipments						Production of Pig Iron	Production of Steel Ingots and Castings
	Newfound-land (incl. Labrador)	Quebec	Ontario	British Columbia	Canada			
					Quantity	Value		
	tons	tons	tons	tons	tons	\$	tons	tons
1958.....	5,390,775	6,060,325	3,644,952	630,271	15,726,323	126,131,181	3,059,579	4,359,466
1959.....	6,105,819	11,515,169	6,018,089	849,248	24,488,325	192,666,101	4,182,775	5,901,487
1960.....	7,611,365	7,457,971	5,325,197	1,156,297	21,550,830	175,082,523	4,298,849	5,809,105
1961.....	7,611,340	5,639,931	5,772,664	1,335,068	20,359,003	187,950,047	4,946,021	6,488,307
1962.....	7,986,910	11,163,982	6,414,936	1,793,848	27,359,676	263,004,217	5,276,753	7,173,534
1963.....	9,683,004	11,650,787	6,749,617	2,060,241	30,143,649	313,182,963	5,914,997	8,190,275
1964.....	12,763,575	15,512,916	8,046,769	2,002,562	38,325,822	404,951,696	6,550,835	9,132,174
1965.....	14,500,495	14,817,820	8,475,218	2,165,403	39,958,936	413,064,861	7,079,439	10,068,091
1966.....	16,546,189	13,848,441	8,144,289	2,151,804	40,690,723	431,659,083	7,216,610	10,020,131
1967.....	16,270,000	14,518,000	8,401,244	2,114,177	41,303,421	455,242,942	6,940,374	9,694,371

Lead and Zinc.—Production of lead in 1967 totalled 321,563 tons, 7 p.c. more than in 1966 and the highest on record. Refined lead production totalling 190,300 tons, was derived from two plants, one operated by Cominco Ltd. at Trail, B.C., where annual capacity is 183,000 tons, and the other operated by East Coast Smelting and Chemicals Company Limited, a subsidiary of Brunswick Mining and Smelting Corporation Limited at Belledune, N.B., where capacity is 33,000 tons annually. Operations at Belledune

were hampered by start-up problems and production was well below capacity. In June 1967, Noranda Mines Limited purchased control of Brunswick. Exports of lead in ores and concentrates totalled 126,200 tons of contained lead, compared with 112,900 tons in 1966, and went mainly to Japan, Belgium, the United States and West Germany. Exports of refined lead amounted to 132,300 tons, 25,800 tons more than in the previous year. The lead price, f.o.b. Toronto and Montreal, was 14 cents a pound throughout the year.

Zinc production rose in 1967 to a new record of 1,086,600 tons, 13 p.c. more than in 1966 and equivalent to 30 p.c. of the non-communist world total. Canada has been the world's largest mine producer since 1964. Refined zinc output rose from 382,600 tons in 1966 to 396,100 tons in 1967. Canada's four zinc plants all operated at less than capacity, due to start-up difficulties at the Belledune smelter and in response to market conditions in the case of the other plants. Exports of zinc in ores and concentrates, totalling 735,700 tons, went mainly to the United States, Belgium, Japan, the Netherlands and Britain. Refined exports amounted to 297,600 tons and went mainly to Britain and the United States. The Canadian domestic producers' price of zinc dropped from 14.5 to 13.75 cents a pound on May 1 and to 13.5 cents a pound on June 21, where it remained for the rest of the year.

Production of lead and zinc in the Northwest Territories, amounting to 132,500 tons and 200,000 tons respectively, came from Pine Point Mines Limited. Construction continued on the 3,000-ton addition to the mill along with preparation of the nearby Pyramid open-pit mine where production was scheduled to start late in 1968. In the Yukon Territory, United Keno Hill Mines Limited reduced its milling rate to 50,000 tons a year. Anvil Mining Corporation Limited began construction of a 5,500-ton mill at its Vangorda Creek property that is scheduled to start operations in July 1969; annual output is expected to be 90,000 tons of lead and 130,000 tons of zinc in concentrates, which will be shipped to Japan for smelting. At this rate of output, the Anvil mine will be one of the largest lead-zinc mines in Canada.

Lead and zinc production in British Columbia was mainly from Cominco's Sullivan mine and 10,000-ton concentrator at Kimberley. The company operated also the Bluebell mine and 700-ton mill in the Slocan district. Western Mines Limited started production of lead, zinc and copper concentrates at Buttle Lake on Vancouver Island and Anaconda Company (Canada) Ltd. produced copper and zinc concentrates at Britannia Beach. Production ended in November at the mine of Aetna Investment Corporation Limited at Toby Creek. Regular operations were carried out by Canadian Exploration, Limited and Reeves MacDonald Mines Limited near Salmo, and a number of small producers operated intermittently in many areas of the province, shipping high-grade ore or concentrate to Trail.

Hudson Bay Mining and Smelting Co., Limited recovered lead and zinc from the copper-zinc-lead ores of two mines at Flin Flon on the Saskatchewan-Manitoba border and two mines near Snow Lake, Man., and continued the development of new mines near Snow Lake. Share Mines and Oils Ltd. completed construction of a 350-ton mill at Hanson Lake, Sask., 35 miles west of Flin Flon, and began operations in June 1967, shipping zinc concentrates to Flin Flon for treatment. Sherritt Gordon Mines Limited announced plans to bring its Fox Lake mine into production in 1969 at 3,000 tons a day to produce zinc, copper and pyrite concentrates.

In Ontario, Ecstall Mining Limited operated a zinc-copper-lead open-pit and 9,000-ton mill near Timmins and in 1967, which was the first full year of operation, became the second largest mine producer of zinc in Canada, with an output of 225,000 tons. Other Timmins-district producers were Kam-Kotia Mines Limited and Canadian Jamieson Mines Limited, which operated copper-zinc mines and mills. The remainder of Ontario's zinc output came principally from copper-zinc mines at Manitouwadge operated by Noranda Mines Limited, Willecho Mines Limited, and Willroy Mines Limited.

Mine output of zinc in Quebec decreased by 17 p.c. to 242,900 tons in 1967. Lead output, which is small in Quebec, was also well below that of 1966. A decline in the grade of ore mined accounted for most of the reduced output of zinc. Five mining companies associated with Noranda Mines Limited (Mattagami Lake Mines Limited, Orchan Mines Limited, Normetal Mines Limited, Quemont Mines Limited and New Hosco Mines Limited) accounted for 75 p.c. of zinc output in Quebec. Coniagas Mines, Limited closed its Bachelor Lake zinc-lead mine in May and New Calumet Mines Limited placed its lead-zinc mine on a salvage basis. Lake Dufault Mines, Limited near Noranda, Manitou-Barvue Mines Limited near Val d'Or, Cupra Mines Limited and Solbec Copper Mines, Ltd. at Stratford Centre and Mines de Poirier Inc., south of Matagami, operated copper-zinc mines and produced the remainder of Quebec's zinc.

In New Brunswick the largest lead-zinc producer was Brunswick Mining and Smelting Corporation Limited, which operated the No. 12 and No. 6 mines and concentrators and a new Imperial Smelting blast furnace in the Bathurst district. Heath Steele Mines Limited expanded output of zinc, lead and copper concentrates, and Nigadoo River Mines Limited started operating a 1,000-ton lead-zinc-copper mill at Robertville, 25 miles northwest of Bathurst.

In Nova Scotia the small production of lead and zinc was from a mine at Walton operated by Dresser Industries, Inc., which produces barite as well.

In Newfoundland there was increased production over 1966 of both lead and zinc at the zinc-lead-copper mine of American Smelting and Refining Company at Buchans. Consolidated Rambler Mines Limited, Baie Verte, closed its zinc recovery circuit in October but continued milling copper ore.

12.—Producers' Shipments of Lead from Canadian Ores, by Province, and Total Value, 1958-67

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons
1958.....	23,980	—	94	3,150	1,256
1959.....	22,457	—	—	2,910	1,611
1960.....	24,022	—	—	2,669	831
1961.....	21,968	—	—	3,392	835
1962.....	25,330	2,682	1,879	4,716	1,144
1963.....	23,392	1,400	1,783	4,337	1,539
1964.....	25,415	1,669	21,716	3,954	2,027
1965.....	21,916	1,841	43,654	4,213	1,943
1966.....	21,754	1,488	51,864	3,909	1,985
1967 ¹	23,500	393	45,361	2,095	5,055

	Manitoba	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1958.....	—	147,417	10,783	—	186,680	42,413,805
1959.....	—	148,922	10,796	—	186,696	39,616,835
1960.....	1,037	166,947	10,144	—	205,650	43,926,888
1961.....	3,054	192,800	8,385	—	230,435	47,054,765
1962.....	3,792	167,641	8,145	—	215,329	42,721,341
1963.....	2,737	157,487	8,490	—	201,165	44,256,199
1964.....	1,295	134,369	10,209	3,063	203,717	54,759,110
1965.....	1,316	125,167	8,926	82,831	291,807	90,460,323
1966.....	557	105,747	7,988	105,330	300,622	89,827,072
1967 ¹	1,926	102,332	7,401	132,500	321,563	90,057,520

¹ Includes 1,000 tons of producers' shipments in Saskatchewan.

13.—Producers' Shipments of Zinc, by Province, and Total Value, 1958-67

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	tons	tons	tons	tons	tons	tons
1958.....	33,870	—	3,162	56,923	46,239	11,512
1959.....	31,674	—	—	47,058	44,982	15,702
1960.....	34,208	—	—	49,807	45,230	24,390
1961.....	34,638	—	—	54,005	51,937	46,509
1962.....	32,541	757	2,498	70,737	63,132	49,920
1963.....	34,485	—	10,614	75,084	66,470	46,392
1964.....	38,982	595	54,372	236,540	72,076	42,645
1965.....	36,187	299	123,595	272,883	60,675	40,763
1966.....	34,160	678	142,395	293,148	82,395	34,967
1967 ^p	34,100	46	153,720	242,941	272,737	35,629

	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada	
	tons	tons	tons	tons	Quantity	Value
	tons	tons	tons	tons	tons	\$
1958.....	48,328	217,304	7,761	—	425,099	92,501,496
1959.....	46,877	203,092	6,623	—	396,008	96,942,663
1960.....	42,703	203,833	6,702	—	406,873	108,635,003
1961.....	28,360	194,486	6,069	—	416,004	104,749,879
1962.....	30,899	206,716	5,944	—	463,144	112,080,981
1963.....	33,320	201,432	5,925	—	473,722	121,083,466
1964.....	28,437	200,399	6,547	3,920	684,513	193,990,897
1965.....	27,983	158,336	6,624	94,690	822,035	248,254,768
1966.....	28,909	152,562	5,725	189,167	964,106	291,160,076
1967 ^p	30,205	112,766	4,413	200,000	1,086,557	314,904,646

Gold.—Canadian gold production in 1967 amounted to 2,953,198 oz.t. valued at \$111,483,225, a decline of 11.0 p.c. from 1966. The average price for gold paid by the Royal Canadian Mint in 1967 was \$37.75 per oz.t. (Cdn.), up from \$37.71 in the previous year. Since 1962, the range in value for the Canadian dollar has been set at \$0.916 to \$0.934 in relation to the U.S. dollar and the corresponding Royal Canadian Mint gold price between \$37.46 and \$38.22 per oz.t. Canadian lode and placer gold mines continue to experience serious economic difficulties with costs of recovery maintaining an upward trend. Of the 44 lode gold mines operating in Canada in 1967 there were only four that did not receive assistance under the terms of the Emergency Gold Mining Assistance Act. Three lode gold mines closed in 1967, two amalgamated and three new mines commenced production.

Gold produced from lode gold mines, from base metal ores and from placer mines dropped by 9.4 p.c., 7.8 p.c. and 78.4 p.c., respectively, below 1966 levels. The proportion of gold derived from lode gold mines was unchanged at 81.2 p.c. of the total output, and that from base metal ores and placer mines contributed 18.5 p.c. and 0.3 p.c., respectively, compared with 17.6 p.c. and 1.3 p.c. in 1966. Ontario remained the principal producing province, accounting for 50.5 p.c. of the total compared with 50.0 p.c. in 1966; Quebec and the Northwest Territories accounted for 28.4 p.c. and 12.3 p.c., respectively, and British Columbia accounted for 3.9 p.c. of the total compared with 3.6 p.c. in 1966.

In Ontario, production declined 10.1 p.c. to 1,492,620 oz.t. from 1,660,750 oz.t. in 1966; 21 lode gold mines operated during the year compared with 25 in 1966. In addition, Lake Shore Mines Limited operated its mill until October at Kirkland Lake on the re-treatment of old tailings. One mine—Wilmar Mines Limited—started operations in 1967 and two adjoining operating mines amalgamated—MacLeod-Cockshutt Gold Mines

Limited and Consolidated Mosher Mines Limited—to become MacLeod Mosher Gold Mines Limited. Gold recovered as a by-product from base metal ores was 5.5 p.c. of the provincial total.

Quebec production declined by 10.4 p.c. to 837,772 oz.t. from 935,459 oz.t. in 1966; lode gold output was 6.7 p.c. lower. Eleven gold mines operated in the province in 1967 and two closed—Chimo Gold Mines Limited and Sullivan Consolidated Mines Ltd. Gold recovered as a by-product from base metal ores represented 33.9 p.c. of the provincial total compared with 37.4 p.c. in 1966.

In the Northwest Territories, a 14.5-p.c. drop in production from 424,029 oz.t. in 1966 to 362,675 oz.t. was mainly caused by a decrease in output from Giant Yellowknife Mines Limited and Discovery Mines Limited. Most of the production in the territories is from lode mines.

British Columbia production amounted to 114,708 oz.t. compared with 120,705 oz.t. in 1966. The closure of Cariboo Gold Quartz Mining Company Limited in April resulted in a decrease of 14.8 p.c. in lode gold production. Gold recovered as a by-product from base metal ores represented 53.0 p.c. of the provincial total compared with 46.1 p.c. in 1966.

Combined production for Manitoba and Saskatchewan, most of it from base metal ores, was 5.2 p.c. lower at 101,690 oz.t. compared with 107,243 oz.t. in 1966. Production declined at San Antonio Gold Mines Limited, the only lode gold mine in the Prairie Provinces.

In Yukon Territory, production dropped from 43,466 oz.t. in 1966 to 17,474 oz.t. in 1967 mainly because of the termination of the placer operations near Dawson at the end of the 1966 season by Yukon Consolidated Gold Corporation Limited. This was partly offset by an increase in output of by-product gold, from 850 oz.t. to 8,400 oz.t., at the new copper mine of New Imperial Mines Limited.

In Newfoundland and New Brunswick, all gold was recovered as a by-product of base metal production.

14.—Producers' Shipments of Gold, by Province, and Total Value, 1958-67

NOTE.—Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.
1958.....	13,381	131	52	1,044,846	2,716,514	87,356	86,590
1959.....	13,411	—	—	999,388	2,683,449	51,186	78,588
1960.....	13,515	3	—	1,035,914	2,732,673	52,762	84,775
1961.....	14,429	—	—	1,054,029	2,637,720	57,747	70,784
1962.....	13,966	—	553	993,560	2,421,249	68,259	66,034
1963.....	12,318	—	1,128	917,229	2,338,854	53,084	64,813
1964.....	16,717	63	1,623	934,769	2,155,370	69,986	46,185
1965.....	23,657	—	1,659	905,380	1,946,003	67,685	46,173
1966.....	25,667	20	1,953	935,459	1,660,750	64,565	42,678
1967 ^a	24,497	—	1,632	837,772	1,492,620	51,969	49,721

14.—Producers' Shipments of Gold, by Province, and Total Value, 1958-67—concluded

Year	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada	
					Quantity	Value
	oz.t.	oz.t.	oz.t.	oz.t.	oz.t.	\$
1958.....	282	210,612	67,745	343,838	4,571,347	155,334,370
1959.....	200	184,312	66,960	405,922	4,483,416	150,508,275
1960.....	191	212,859	78,115	418,104	4,628,911	157,151,527
1961.....	171	164,467	66,878	407,474	4,473,699	158,637,366
1962.....	186	159,492	54,805	400,292	4,178,396	156,313,794
1963.....	132	159,473	55,211	400,885	4,003,127	151,118,045
1964.....	59	139,959	57,844	412,879	3,835,454	144,788,388
1965.....	200	117,764	45,031	452,479	3,606,031	136,051,943
1966.....	182	120,705	43,466	424,029	3,319,474	125,177,364
1967 ^a	130	114,708	17,474	362,675	2,953,198	111,483,225

Silver.—Canada's mine production of silver in 1967 rose to a record 36,426,000 oz.t., about 3,008,000 oz.t. more than in 1966. The increase resulted mainly from by-product output at the Kidd Creek base metal mine of Ecstall Mining Limited near Timmins, Ont., which completed its first full year of operation in 1967. Much higher output in Ontario, together with small increases in Manitoba and Saskatchewan, offset declines in the other provinces and the two territories. Ontario was again the leading silver-producing province with an output of 15,583,000 oz.t., 4,600,000 oz.t. more than in 1966. Base metal ores continued to be the main source of Canadian output accounting for more than 85 p.c. of total production. Almost 14 p.c. came from silver-cobalt ores mined in northern Ontario and the remainder was a by-product of lode and placer gold ores.

Canadian production was valued at \$63,095,000 in 1967. The \$16,343,000 increase over 1966 was partly due to increased output but more particularly to higher price. The price of silver in Canada reached an all-time high of \$2.344 oz.t. in November 1967. Reported consumption of silver in 1967 was 14,577,000 oz.t., some 6,727,000 oz.t. less than in 1966, mainly accounted for by substantially reduced requirements for coinage. To conserve its silver inventories and as an interim measure pending conversion to pure nickel coinage in 1968, the Royal Canadian Mint temporarily suspended production of silver dollars and half-dollars, and in September reduced the silver content of all 10- and 25-cent coins from 80 p.c. to 50 p.c.

Canadian Copper Refiners Limited at Montreal East, Que., Canada's largest producer of refined silver, recovered 11,276,000 oz.t. in refining anode and blister copper. The silver refinery of Cominco Ltd. at Trail, B.C., the second largest producer, recovered 5,212,000 oz.t. in the processing of lead and zinc ores and concentrates. Other producers of refined silver, all in Ontario, were Kam-Kotia Mines Limited, Refinery Division, at Cobalt (from silver-cobalt ores and concentrates); International Nickel at Copper Cliff (from nickel-copper concentrates); Royal Canadian Mint at Ottawa (from gold bullion); and Hollinger Consolidated Gold Mines, Limited at Timmins (from gold precipitates). East Coast Smelting and Chemical Company Limited early in 1967 opened a smelting-refining-chemicals complex in New Brunswick which includes, in addition to lead and zinc reduction plants, a silver refinery with a rated capacity of 2,000,000 oz.t. annually.

The three largest primary sources of silver in Canada in 1967 were the zinc-copper-silver mine of Ecstall Mining Limited near Timmins, Ont., the silver-lead-zinc mines in Yukon

Territory about 200 miles north of Whitehorse, operated by United Keno Hill Mines Limited, and the Sullivan lead-zinc-silver mine at Kimberley, B.C., operated by Cominco Ltd. Expressed as the silver content of concentrates produced, Ecstall recovered 7,800,000 oz.t. of silver, United Keno 3,804,644 oz.t., and Cominco Ltd. at its Sullivan mine recovered 3,302,047 oz.t. Other important producers of by-product silver included Echo Bay Mines Ltd. near Port Radium, N.W.T.; Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man.; Noranda Mines Limited (Geco Division) at Manitouwadge, Ont.; International Nickel at Copper Cliff, Ont.; Brunswick Mining and Smelting Corporation Limited near Bathurst, N.B.; and American Smelting and Refining Company (Buchans Unit) in Newfoundland. Some 4,954,000 oz.t. of silver were derived from silver-cobalt ores mined in the Cobalt-Gowganda area of northern Ontario; the largest producer was again Silverfields Mining Corporation Limited with an output of 1,132,622 oz.t.

15.—Producers' Shipments of Silver, by Province, and Total Value, 1958-67

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Average Price per oz. t. (Canadian funds)	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	cts.	oz. t.	oz. t.	oz. t.	oz. t.	oz. t.	oz. t.
1958.....	86.81	1,267,078	4	51,139	3,908,361	9,815,257	320,759
1959.....	87.78	1,125,110	—	—	4,108,241	10,540,856	373,827
1960.....	88.91	1,271,126	—	—	4,115,105	11,220,823	501,637
1961.....	94.26	1,145,105	—	—	4,315,844	8,870,402	767,543
1962.....	116.50	1,181,648	724,245	178,521	4,603,019	9,383,445	847,879
1963.....	138.40	981,005	423,189	332,472	4,441,644	9,601,621	766,976
1964.....	140.00	1,089,748	544,224	1,469,192	4,564,559	9,929,858	727,642
1965.....	140.00	1,086,978	443,630	2,745,274	5,154,403	10,822,213	707,024
1966.....	139.90	1,097,425	540,663	3,108,669	5,214,146	10,900,204	547,797
1967 ^a	173.21	1,056,734	89,238	2,785,198	4,921,250	15,582,832	647,824

	Saskatchewan	British Columbia	Yukon Territory	Northwest Territories	Canada ¹	
					Quantity	Value
	oz. t.	oz. t.	oz. t.	oz. t.	oz. t.	\$
1958.....	1,299,077	8,013,428	6,415,560	72,779	31,163,470	27,053,007
1959.....	1,187,439	7,463,285	7,054,632	70,560	31,923,969	28,022,860
1960.....	1,163,845	8,447,440	7,217,361	79,473	34,016,829	30,244,363
1961.....	876,450	8,391,640	6,937,086	77,890	31,381,977	29,580,651
1962.....	762,215	6,186,937	6,482,244	72,802	30,422,972	35,442,761
1963.....	746,683	6,451,158	6,106,037	81,206	29,932,003	41,425,891
1964.....	593,320	5,280,129	5,638,712	65,223	29,902,611	41,863,655
1965.....	640,995	4,991,109	4,615,995	1,064,824	32,272,464	45,181,450
1966.....	603,358	5,548,823	4,194,580	1,662,192	33,417,874	46,751,605
1967 ^a	642,272	5,492,062	3,769,533	1,439,124	36,426,079	63,094,821

¹ Includes relatively small quantities produced in Alberta.

Uranium.—The uranium industry has begun a new period of development based on the rapidly expanding demand for long-term supplies of nuclear fuel for the generation of electricity. These requirements are now expected to be in excess of 80,000 tons of uranium oxide (U₃O₈) a year in 1980, thus necessitating a fourfold increase in the non-communist world production capacity over a period of only 13 years. The urgency of the situation is

more fully appreciated when it is realized that there is an average time-lag of some eight to 10 years between the initiation of an exploration program and first production from a successful discovery. Understandably, the pace of exploration activity in both Canada and the United States has quickened and new mine development has become a reality.

In 1967, Canadian uranium producers increased their output for the first time since 1959, producing about 4,100 tons of U_3O_8 . Shipments from the four producers, however, were only 3,724 tons of U_3O_8 valued at \$49,237,508. Much of the excess in production over shipments is being stockpiled for early deliveries under new commercial contracts. Denison Mines Limited operated its Elliot Lake, Ont., mine at better than 50 p.c. of its 6,000 ton-a-day capacity and increased its output by some 29 p.c. Eldorado Mining and Refining Limited (now Eldorado Nuclear Limited) operated its Beaverlodge, Sask., mine at about 80 p.c. of its 2,000-ton-a-day capacity and increased its output by 19 p.c. Rio Algom Mines Limited's Nordic Mine at Elliot Lake continued at full capacity (3,700 tons a day) but experienced a slight drop in output due to lower grades of ore. Stanrock Uranium Mines Limited, at its Elliot Lake mine-water-treatment operation, experienced a significant drop in production, largely because of a change in its solution mining practice.

Deliveries to the United States under contracts negotiated in the 1950s were completed early in 1967. Deliveries to Britain under these contracts are now being made only by Rio Algom, which is delivering at the rate of 1,200 tons of U_3O_8 a year until October 1971. By the end of 1967, Canadian producers had negotiated seven significant new commercial sales contracts for a total of almost 35,000 tons of U_3O_8 with buyers in Britain, Canada, Japan and West Germany. Rio Algom obtained three of the contracts, totalling some 21,300 tons of U_3O_8 ; Denison obtained the largest single commercial contract to date totalling 10,500 tons with Japan; and Eldorado obtained three smaller contracts for a total of 2,800 tons. All are long-term contracts ranging between five and 10 years in length, and prices were not disclosed.

These contracts are probably the first in a series of many long-term contracts to be negotiated by Canadian producers. Japan, West Germany and Britain as well as several other West European countries are potential customers. The United States market, potentially one of the largest markets, is temporarily cut off from Canadian producers by regulations which restrict the enrichment of foreign uranium in USAEC enrichment plants for domestic use. However, it is expected that this restriction will be removed by mid-1973. Although Eldorado Nuclear Limited handled all marketing of Canadian uranium in the past, producers are now at liberty to negotiate their own sales contracts consistent with the Government's policy on peaceful uses announced in 1965.

Canadian exploration for uranium, essentially dormant since 1956, again reached significant proportions in 1967. Although much of the activity centred around the established mining camps of Elliot Lake, Ont., and Beaverlodge, Sask., new areas also became prominent. Particularly noteworthy was the Agnew Lake area, about 45 miles east of Elliot Lake, where a new mine owned by Agnew Lake Mines Limited was being developed. Mine development was carried out also by Rio Algom at its Quirke Lake property near Elliot Lake, and by Eldorado at the new Hab Mine, north of its Beaverlodge operation. Further, Eldorado is expanding its Port Hope, Ont., refinery to produce uranium hexafluoride, used as feed material for the gaseous diffusion, uranium enrichment process. Thus, in an effort to prepare for the expected heavy uranium demand of the 1970s, the Canadian uranium industry has begun expansion in every phase of uranium production from exploration to refining. There is every reason to anticipate that uranium will once again take a prominent place in Canada's mineral industry and that Canada will maintain a leading position in uranium supply as the world moves swiftly into the atomic age.

16.—Quantity and Value of Producers' Shipments of Uranium (U_3O_8), by Province, 1958-67

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	lb.	\$	lb.	\$	lb.	\$	lb.	\$
1958.....	19,970,136	210,149,700	5,924,253	59,815,924	910,843	9,572,847	26,805,232	279,538,471
1959.....	25,492,171	268,529,993	5,372,685	54,457,321	919,333	8,155,729	31,784,189	331,143,043
1960.....	19,793,727	211,983,533	4,624,431	48,722,961	1,077,211	9,231,698	25,495,369	269,938,192
1961.....	14,970,594	151,060,610	4,310,871	44,631,014	—	—	19,281,465	195,691,624
1962.....	12,805,203	118,283,081	4,053,966	39,900,588	—	—	16,859,169	158,183,669
1963.....	12,770,421	102,951,146	3,932,645	33,957,973	—	—	16,703,066	136,909,119
1964.....	11,805,143	63,606,944	2,765,164	19,902,485	—	—	14,570,307	83,509,429
1965.....	6,825,046	47,234,892	2,060,167	15,126,485	—	—	8,885,213	62,361,377
1966.....	5,875,698	42,758,135	1,987,992	11,576,652	—	—	7,863,690	54,334,787
1967p.....	5,448,471	39,237,508	2,000,000	10,000,000	—	—	7,448,471	49,237,508

Molybdenum.—Molybdenum has advanced in the past five years from a relatively minor to an important position among the metals produced in Canada. Production in the early 1960s was in the order of 800,000 lb. annually with a value of \$1,300,000; by 1967 it reached a record 21,200,000 lb. valued at \$37,900,000, of which 17,500,000 lb. valued at \$31,300,000 came from British Columbia and 3,700,000 lb. valued at \$6,600,000 came from Quebec. Canada now ranks second only to the United States among the world producers of molybdenum.

Endako Mines Limited in British Columbia produced 14,300,000 lb. of molybdenum contained in molybdenite concentrates and in molybdic oxide in 1967, making this the second largest molybdenum-producing mine in the world. British Columbia Molybdenum Limited started mill tune-up in November 1967, at its new 6,000-ton-a-day mine and concentrator near Alice Arm; it is expected to have an annual output of 4,000,000 to 5,000,000 lb. a year and will increase the province's molybdenum output by over 20 p.c. Other molybdenum-producing mines in British Columbia in 1967 were Brynnor Mines Limited, Boss Mountain Division, with a production of 3,100,000 lb., and Red Mountain Mines Limited near Rossland. Bethlehem Copper Corporation Ltd. carried out a major mill expansion program and made flow-sheet modifications preparatory to recovering molybdenum as a by-product of its copper operations. Brenda Mines Limited, Lornex Mining Corporation Limited and Highmont Mining Corporation Ltd. all continued exploration and feasibility studies designed to bring molybdenum mines into production.

In Quebec 3,700,000 lb. of molybdenum valued at \$6,600,000 were produced by Preissac Molybdenite Mines Limited, Anglo-American Molybdenite Mining Corporation, Molybdenite Corporation of Canada Limited, and Gaspé Copper Mines, Limited; Gaspé Copper recovers molybdenum as a by-product of copper operations at Murdochville, whereas the other three recover molybdenum as their primary product.

Canada's major markets for molybdenum and molybdic oxide are Britain, Japan, the Netherlands, West Germany, France and the United States.

Platinum Metals.—Production of the platinum metals in 1967, which amounted to 403,300 oz.t. valued at \$34,587,000, was 7,200 oz.t. and \$2,200,000 higher than in 1966 as a result of increased nickel production. Canadian nickel ores contain about 0.025 oz.t. of platinum metals a ton. When nickel matte is electrolytically refined, the platinoids—platinum, palladium, rhodium, ruthenium, iridium and osmium—are precipitated in the electrolytic tanks as a sludge. The sludge is purified and sent to refineries in Britain and the United States for recovery of the platinum metals.

Half of the world's output of platinum metals is from the Soviet Union and most of the remainder is produced in the Republic of South Africa and Canada. World demand remained strong in 1967 and consumption in the non-communist countries exceeded mine production. The deficit was made up by purchases from the Soviet Union and releases from the United States stockpile. An erratic pattern of sales by the Soviet Union caused platinum prices to rise—the official price rose from \$100 to \$125 an oz.t. and the dealers' price from \$160 to \$230 an oz.t.

Aluminum.—Canada ranks third in world aluminum production, after the United States and the Soviet Union. In the non-communist world, 1967 production of primary aluminum was 6,699,000 tons; Canada produced 913,342 tons and exported 760,649 tons. As the production of most countries included in the world total is consumed internally, Canadian exports represent a large proportion of the international trade in aluminum. In Canada, two companies produce primary aluminum. Canadian British Aluminum Limited operates a smelter at Baie Comeau, Que., having an annual capacity of 115,000 tons. Aluminum Company of Canada Limited (Alcan) operates smelters at Arvida, Alma, Shawinigan and Beauharnois in Quebec and at Kitimat in British Columbia. Combined capacity of Alcan smelters was approximately 950,000 tons at the end of 1967. As aluminum production is derived from imported ores and concentrates, production and value of this metal is classed with manufactured products in Canadian statistics. The export price of primary aluminum was 24.5 cents a pound (U.S.) in 1967, unchanged since November 1964. The Canadian price was increased from 26.0 to 26.5 cents a pound in January 1967 and remained at this level throughout the year.

Titanium.—Ilmenite, an iron-titanium oxide, is mined by conventional open-pit methods in the Lac Tio—Allard Lake area of Quebec by Quebec Iron and Titanium Corporation (QIT). The ilmenite is shipped to QIT's beneficiation plant and smelter at Sorel near Montreal. The main products are a slag, rich in titanium dioxide, known as "Sorelslag", and a variety of high-quality irons known as "Sorelmetal". The titania slag is sold to producers of white titanium-dioxide pigments in Canada, United States, Britain and other countries. QIT established an annual production record in 1967 with an output of 537,906 long tons of titania slag (70-72 p.c. TiO_2) and 366,660 long tons of co-product specialty iron. Production in 1966 was 468,547 long tons of titania slag and 315,606 long tons of iron.

Atlas Titanium Limited, Welland, Ont., a subsidiary of Rio Algom Mines Limited, carries out second-stage melting of imported titanium ingots and processes the metal into various mill products for sale in domestic and foreign markets. Atlas titanium baskets are widely used in the nickel-plating industry and its mill products are directed to both military and industrial uses.

Cadmium.—Cadmium output in 1967, expressed as the sum of refined metal and the recoverable cadmium content of exported zinc concentrates, was 4,771,677 lb. valued at \$13,385,156; corresponding figures for 1966 were 3,236,862 lb. and \$8,351,103. The increase of nearly 50 p.c. in the volume of output was due to the start of production late in 1966 at the Texas Gulf Sulphur Company's Kidd Creek mine near Timmins, Ont. Cadmium is recovered as a by-product during the smelting and refining of zinc ores and concentrates. Most zinc ores in Canada carry minor quantities of the metal, being in the order of one half pound of cadmium in each ton of ore on average, but varying from none to $1\frac{1}{2}$ lb. The largest production comes from the Kidd Creek mine, followed by Pine Point Mines Limited in the Northwest Territories, Cominco Ltd. in British Columbia, Hudson Bay Mining and Smelting Co., Limited in Saskatchewan and Manitoba, and the Noranda group of companies in Ontario and Quebec. Refined cadmium is produced at the electrolytic zinc plants of Cominco Ltd., Trail, B.C., Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., and Canadian Electrolytic Zinc Limited at Valleyfield, Que. The newest producer of metallic cadmium is East Coast Smelting and Chemical Company Limited at Belledune, N.B., which started zinc-lead smelting and by-product recovery of cadmium in 1967.

Cobalt.—Canadian cobalt production in 1967 was 3,300,000 lb. valued at \$6,800,000 compared with 3,500,000 lb. valued at \$7,100,000 in 1966. Cobalt is recovered as a by-product of the smelting and refining of nickel-copper ores of Sudbury, Ont., from nickel ores of Thompson, Man., and from silver ores of Cobalt, Ont. International Nickel recovers cobalt from its refinery operations at Port Colborne, Ont., Thompson, Man., and Clydach, Wales. Falconbridge Nickel Mines Limited produces cobalt at its refinery at Kristiansand, Norway, from nickel-copper matte shipped from Canada. Sherritt Gordon Mines recovers by-product cobalt at its refinery at Fort Saskatchewan, Alta. The Cobalt Refinery Division of Kam-Kotia Mines Limited produces cobalt oxide and speiss as by-products of smelting and refining complex silver-cobalt concentrates from mines in the Cobalt-Gowanda area of Ontario.

Magnesium.—Dominion Magnesium Limited, with mine and smelter at Haley, Ont., is the only producer in Canada; smelting capacity is 11,300 tons annually. Production increased to 8,685 tons in 1967 from 6,723 tons in 1966 and exports of primary magnesium increased slightly to \$3,696,000 compared with \$3,452,000. Imports of magnesium metal and alloys totalled \$1,952,000. Canadian consumption in 1967 was 5,054 tons, including 1,699 tons of imported metal. World production, excluding communist countries, was estimated at 160,600 tons in 1967.

Selenium and Tellurium.—Selenium production in 1967 was 752,200 lb. valued at \$3,467,000, and was 31 p.c. higher than in 1966. Tellurium output was 82,100 lb. valued at \$530,400, 14 p.c. higher. These metals are recovered from the anode muds resulting from electrolytic refining of copper anodes at the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont.

Columbium.—In 1967, columbium output of St. Lawrence Columbium and Metals Corporation, the only Canadian producer, was 2,207,000 lb. of columbium pentoxide (Cb_2O_5) in pyrochlore concentrates valued at \$2,627,000; its mine is near the town of Oka, 20 miles west of Montreal. In Ontario, several associated companies undertook a program of shaft-sinking and cross-cutting to provide bulk samples for large-scale metallurgical testing on a columbium-pyrochlore property in the James Bay Lowlands area south of Moosonee. Previous drilling indicated a possible 80,000 tons per vertical foot averaging 0.52 p.c. columbium pentoxide.

Vanadium.—Vanadium in the form of vanadium pentoxide (V_2O_5) is recovered from crude oil by Canadian Petrofina Limited at its refinery near Pointe aux Trembles, Que. It is the first plant in Canada to recover vanadium commercially and its production capacity is about 1,000 lb. of V_2O_5 a day. The Athabasca tar sands in northern Alberta contain an estimated 0.024 p.c. of vanadium, part of which could be recovered from the coke residue of the distillation process.

Subsection 2.—Industrial Minerals

Production and value of production of industrial minerals attained record levels in 1967 despite relatively severe cutbacks in the output of cement and gypsum, two of the higher-tonnage industrial minerals. The increase over 1966 of about 6 p.c. in the value of producers' shipments, which totalled \$883,236,000, resulted mainly from higher production of sulphur and potash; shipments of non-metallic minerals were valued at \$414,000,000 and of clay products and other structural materials of mineral origin, at \$469,200,000. New production records were established for several other minerals including nepheline syenite, potash, salt, and sand and gravel. Developments in a number of industrial minerals during 1967 are reviewed below.

Asbestos.—Asbestos production was lower in 1967 than in 1966; the output of 1,401,000 tons valued at \$163,011,000 represented a drop of 5.9 p.c. in quantity and 0.4 p.c. in value. Quebec accounts for about 90 p.c. of the production and British Columbia,

Newfoundland and Ontario for the remainder. Most of the Canadian production is exported, mainly as milled fibre and shorts, to the United States, West Germany, Britain, Japan and other non-communist countries. Canada provides about 40 p.c. of the world's production of asbestos fibre.

Despite the 1967 decline, the industry appears optimistic on a long-term basis, confirmed by the expansion programs recently completed or under way. Asbestos has been an important factor in northern development for a number of years and there are now several active asbestos operations in Northern Canada. Late in 1967 Cassiar Asbestos Corporation began operations at Clinton Creek in Yukon Territory and fibre valued at over \$500,000 was shipped in that year. Exploration of asbestos properties in the region is being undertaken by other groups.

In Ontario, Headman Mines Limited continued development of its Matheson property, and Canadian Johns-Manville on its property near Timmins, operation of these mines was scheduled for 1968. Annual production rate of the latter is estimated at 25,000 tons.

In Quebec, McAdam Mining Corporation plans a development program to assess the fibre grade of an underground deposit in the Chibougamau district. The Asbestos Hill development in the Ungava district of the province has been deferred pending reappraisal.

17.—Quantity and Value of Producers' Shipments of Asbestos, 1958-67

NOTE.—Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1958.....	925,331	92,276,748	1963.....	1,275,530	136,956,180
1959.....	1,050,429	107,433,344	1964.....	1,419,851	145,193,443
1960.....	1,118,456	121,400,015	1965.....	1,388,212	146,188,473
1961.....	1,173,695	128,955,900	1966.....	1,489,055	163,654,863
1962.....	1,215,814	130,281,966	1967 ^a	1,400,708	163,011,249

Potash.—Potash mining is a recent development in Canada, the first output being recorded in 1962, valued at \$3,000,000. Activity in this industry, which is concentrated in Saskatchewan, has since continued at a high tempo. In 1967 production—from two shaft mines at Esterhazy, one at Saskatoon, and a solution mine at Belle Plaine—totalled 2,578,000 tons (K₂O), 29.5 p.c. more than in 1966. The bulk of this output was exported to world markets. Production will be greatly increased when the several new mines and plants come on stream. At the close of 1967, four mines and four refineries were in operation and 10 shafts and six refineries were under construction or due to start. These, when completed, will raise productive capacity from its current level of about 5,000,000 tons of product (KCl concentrate) per year to an estimated 12,000,000 tons per year. Other shafts and plants, and expansions at current operations, as yet unannounced, are expected in the future, possibly in the late 1970s.

Sulphur.—Canadian production of elemental sulphur increased more than 10 p.c. to 2,322,223 tons and all forms of sulphur output amounted to some 3,000,000 tons. Exports of sulphur increased about 15 p.c. in volume to 1,773,671 tons but price increases during 1967 raised the value of exports by almost 30 p.c. to \$58,699,000.

The increase in world demand for sulphur slowed during 1967 and rising production from all sources was expected to balance demand in 1968. Substantial increases in phosphate fertilizer production, together with a less rapid increase in phosphate use resulted in surpluses in phosphate fertilizer supply and the resulting lower rate of increase of sulphur demand.

Despite this expected balance in world sulphur demand and supply in the near term, continued expansion of sulphur production capacity from several sources is steadily making Canada a major source of world sulphur.

A revived interest in the recovery of elemental sulphur from smelter gases, pyrites, crude oils and gypsum and/or anhydrite has been in evidence recently and several potential pyrite-sulphur projects are materializing, particularly at Sudbury.

18.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, and of Elemental Sulphur Sales, 1958-67

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite			Sales of Elemental Sulphur ¹	
	Quantity ²	Value	Gross Weight	Sulphur Content	Value	Quantity	Value
	tons	\$	tons	tons	\$	tons	\$
1958.....	241,055	2,361,252	1,191,731	512,427	4,248,668	94,377	1,872,832
1959.....	277,030	2,716,416	1,099,564	..	3,433,095	145,656	2,620,787
1960.....	289,620	2,854,623	1,032,288	..	3,316,378	274,359	4,298,906
1961.....	277,056	2,708,110	517,258 ³	..	1,830,566	394,762	7,287,881
1962.....	292,728	3,089,537	517,308 ³	..	1,879,584	695,098	9,286,999
1963.....	353,243	3,488,181	476,438 ³	..	1,643,629	1,249,887	13,380,182
1964.....	443,448	4,261,912	351,850 ³	..	1,126,167	1,788,165	18,637,597
1965.....	444,758	4,317,362	382,177 ³	..	1,285,252	2,068,394	26,394,595
1966.....	500,338	6,050,750	326,954 ³	..	1,139,141	2,041,528	40,253,685
1967 ⁴	482,614	5,860,631	375,390 ³	..	1,689,566	2,322,223	70,021,487

¹ Recovered from sour natural gas and nickel sulphide ores, zinc sulphide concentrates at Arvida and Port Maitland, iron residue or sinter.

² Includes sulphur in acid made from roasting
³ Excludes pyrite and pyrrhotite used to produce

Salt.—Production of salt during 1967 established a new record at 5,302,000 tons as a result of increased consumption in the chloralkali industry and for ice and snow control on highways. Far greater tonnages of highway salt were exported to northern United States points in 1967 than in previous years. Rock salt is mined in Nova Scotia and Ontario; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta. Ontario, with two rock salt mines and with advantageous facilities for export of both rock salt and brine, accounted for 86 p.c. of total output. Technical advances continue toward up-grading the purity of various salt products as salt remains a prime chemical raw material with many uses essential to industrial development.

The Canadian Salt Company Limited is adding a second salt-melting furnace to its fine salt plant at Lindbergh, Alta. The furnace product is crushed, sized and sold for use in water softeners. Two other salt-fusion plants are operated in Canada—at Unity, Sask., and Windsor, Ont. Early in 1968, each of the two major salt producers in Canada announced that production of evaporated salt in Saskatchewan would be increased; the Canadian Salt Company Limited through a new brining and evaporating complex at Belle Plaine and Domtar Chemicals Limited through increased facilities at Unity.

19.—Producers' Shipments of Salt, by Province, and Total Value, 1958-67

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	Canada	
	tons	tons	tons	tons	tons	Quantity	Value
						tons	\$
1958.....	125,872	2,126,483	20,560	46,511	55,766	2,375,192	14,989,542
1959.....	120,225	3,036,230	23,547	48,776	61,198	3,289,976	18,034,522
1960.....	163,901	3,007,599	21,925	49,064	72,431	3,314,920	19,355,658
1961.....	225,875	2,861,705	23,103	51,964	83,880	3,246,527	19,552,006
1962.....	312,519	3,155,589	25,010	54,931	90,729	3,638,778	21,927,135
1963.....	356,902	3,187,491	24,883	56,301	96,417	3,721,994	22,316,565
1964.....	448,808	3,335,683	27,744	74,952	101,411	3,988,598	23,203,742
1965.....	459,114	3,900,484	29,834	78,958	115,706	4,584,096	23,985,844
1966.....	474,981	3,782,191	27,069	84,979	122,814	4,492,034	23,846,188
1967 ⁴	470,950	4,579,913	25,800	91,145	134,150	5,301,958	28,622,306

Gypsum.—Gypsum production dropped 14 p.c. to 5,120,000 tons in 1967, its lowest since 1961. Although production in Ontario, Manitoba and British Columbia was maintained at or slightly above 1966 levels, output from the three producing Atlantic Provinces—Nova Scotia, Newfoundland and New Brunswick—was considerably less. Production in Nova Scotia and Newfoundland was down 17 to 18 p.c. In these provinces, it is mined mainly for export to eastern United States, and demand on these markets was reduced because of lower activity in the building construction industry.

The first gypsum-products plant in Saskatchewan was officially opened at Saskatoon in August 1967 by British American Construction and Materials Limited. Crude gypsum for the plant is obtained from a company mine at Amaranth, Man., approximately 400 miles from Saskatoon. At Amaranth, a 10-ft. seam of gypsum is mined at a depth of 125 ft. by the room and pillar system.

20.—Producers' Shipments of Gypsum, by Province, and Total Value, 1958-67

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Ontario	Manitoba	British Columbia	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	\$
1958.....	36,307	3,149,719	105,749	425,733	176,123	70,498	3,964,129	5,189,159
1959.....	37,720	5,036,411	98,250	412,100	200,139	94,010	5,878,630	8,393,703
1960.....	34,346	4,490,427	90,892	355,603	122,063	112,400	5,205,731	9,498,711
1961.....	40,699	4,113,188	85,330	425,287	122,233	153,300	4,940,037	7,750,748
1962.....	83,992	4,451,072	91,835	435,140	122,870	147,900	5,332,809	9,349,775
1963.....	232,259	4,910,536	80,544	439,206	131,767	160,954	5,955,266	11,237,952
1964.....	331,990	5,097,232	104,100	517,239	121,555	188,569	6,360,685	11,523,937
1965.....	442,655	4,862,485	101,012	531,918	159,854	207,705	6,305,629	12,533,384
1966.....	459,685	4,502,836	108,207	565,185	134,225	206,026	5,976,164	12,312,220
1967 ^a	374,672	3,727,829	87,234	571,450	133,770	225,000	5,119,955	10,761,535

Sodium Sulphate.—Production of sodium sulphate (salt cake) derived from alkali lake deposits in the southern part of Saskatchewan increased 4.9 p.c. in 1967 to establish a new high of 425,000 tons. Rising demand for kraft paper, the production of which requires major quantities of sodium sulphate, has stimulated expansion of production facilities in Saskatchewan where seven plants, having a total capacity in the order of 700,000 tons a year were in operation in 1967. An eighth plant, with a capacity of 100,000 tons a year, located 35 miles northwest of Swift Current, will contribute to the output in 1968. The plant consists primarily of a triple-effect evaporation system to remove the water of crystallization from the raw Glauber's salt, which contains 44 p.c. sodium sulphate and 56 p.c. water. This evaporation system has not been used previously in Saskatchewan but is used in many other plants where large amounts of water must be evaporated at low cost.

Nepheline Syenite.—Nepheline syenite was first produced in 1936 and, until Norway also started production much more recently, remained a uniquely Canadian mineral commodity. "Nepheline syenite" is a rock name that applies to a mixture of minerals, essentially the feldspars and nepheline. The presence of nepheline provides the mixture with a higher content of alumina (Al_2O_3) than has either soda or potash feldspar and makes nepheline syenite more desirable than feldspar in certain applications, especially in the manufacture of glass.

The industry is based on a single, large and unusual deposit a few miles northeast of Peterborough, Ont. In 1967, the two producers shipped 406,298 short tons valued at \$4,349,320, about twice as much as a decade earlier. Glass-grade is still by far the main product, but is now accompanied by finer-ground products for use by the ceramic industry in the making of sanitary ware, wall tile and pottery, and by the makers of plastics, foam

rubber and paints as a white filler. The producers also market various lower-grade products, having a higher content of iron, for use by the ceramic industry in such products as sewer pipe, ground-coat enamels and some glazes, in which the discoloration caused by the higher iron content is of no concern.

About three quarters of total production in 1967 was exported. The United States, and principally the glass industry in the northeastern States, provides the largest market but small quantities are shipped to Britain and several countries in Continental Europe and to Puerto Rico, Venezuela, Peru and Australia.

21.—Production and Exports of Nepheline Syenite, 1958-67

Year	Production		Exports	
	Quantity	Value	Quantity	Value
	tons	\$	tons	\$
1958.....	201,306	2,613,446	160,081	2,098,421
1959.....	228,722	2,930,932	178,120	2,345,341
1960.....	240,636	2,891,095	193,298	2,373,354
1961.....	240,320	2,572,169	194,598	2,249,348
1962.....	254,418	2,605,421	193,658	2,210,834
1963.....	254,000	2,699,202	203,262	2,213,942
1964.....	290,300	3,097,172	226,971	2,630,185
1965.....	339,982	3,415,387	247,200	2,968,702
1966.....	366,696	4,109,744	263,624	3,098,000
1967 ^p	406,298	4,349,320	307,613	3,532,000

Silica.—Silica (quartz) production in 1967, at 2,200,000 tons valued at \$5,528,000, was slightly below that of 1966. Domestic production is confined to Ontario, Quebec, Manitoba, Saskatchewan, Alberta and British Columbia, and consists mainly of crushed quartzite and sandstone, and sand for use as metallurgical flux. Of the total 1967 production, 65 p.c. was used as flux; 13 p.c. was lump silica for use in silicon and ferro-silicon manufacture and in the production of elemental phosphorus; and 22 p.c. was silica sand for glass manufacture, silicon carbide production, foundry sand and for other purposes.

Canada's two producers of silica sand—Industrial Minerals of Canada Limited, operating a sandstone quarry at St. Canut des Deux Montagnes and a friable quartzite quarry at St. Donat de Montcalm in Quebec, and the Winnipeg Supply and Fuel Company, Ltd., producing from a loosely bonded sandstone deposit on Black Island in Lake Winnipeg—together supply about one third of the domestic market for silica sand. The remainder is imported from the United States, chiefly into Ontario, Quebec and British Columbia for use by the glass industries, in steel and iron foundries, in artificial abrasives manufacture, and for silicate chemicals and other purposes. Current consumption of silica sand in Canada is in the order of 1,000,000 tons a year.

Interest in silica, particularly in silica sand, continues at a high level in Quebec and Ontario. Industrial Minerals of Canada Limited is constructing a \$1,500,000 mineral processing plant at Midland, Ont., as part of a \$3,000,000 development program planned by the company for the Georgian Bay area, which will include mining facilities at a high-grade silica deposit on Badgeley Island, a crushing plant at the mine site and the grinding plant at Midland. Primary products from the crushing plant will be shipped for manufacture of ferro-silicon and silicon metal as well as to the Midland grinding plant for further processing. Products from Midland will go to glass, ceramic, chemical and other industries in Ontario.

Structural Materials

Total construction in Canada in 1967 was valued at \$11,500,000,000, an increase of 2.7 p.c. over 1966. The estimated value of the 1967 production of structural materials (non-metallic minerals) was \$469,230,000, approximately 10.7 p.c. of the total value of mineral production. A decrease of 1 p.c. in the value of construction materials for 1967 compared with 1966 was attributable mainly to a large decrease in cement shipments. The decline in the use of construction materials during 1967 was due to a normal let-down after the very active construction that took place in most of the larger industrial centres across Canada in 1966 in preparation for the celebration of the Centennial.

Sand and Gravel.—The principal uses for sand and gravel are as aggregate in concrete for building and engineering construction and as fill in road construction. Gravel in boulder sizes is used for rip-rap fill and sometimes for armour-stone construction; the normal scalped, over-sized material is crushed to provide crushed gravel and crusher-run fines. Lithologically, sand and gravel deposits are usually composed of material similar to the rock types in which the deposits are found; infrequently, deposits are composed of materials that have been transported some distance from their origin. Exploitation of these low-value-per-ton materials is greatly influenced by the physical characteristics of the sand or gravel, by the location of the deposit with respect to suitable markets and, of great importance, by the specifications established to differentiate quality products.

The 1967 production of natural sand and gravel aggregate in Canada amounted to 221,900,000 tons with a value of \$158,129,000, an increase of 2.1 p.c. and 4.4 p.c., respectively, compared with 1966.

22.—Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1958-67

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	tons	tons	tons	tons	tons	tons
1958.....	4,062,985	..	2,333,792	4,015,976	40,507,787	67,469,064
1959.....	4,825,724	5,244,968	8,032,122	5,093,496	42,449,734	73,981,703
1960.....	3,912,533	474,184	8,717,693	6,184,924	46,255,963	77,660,833
1961.....	3,383,724	544,497	5,574,377	5,014,234	44,126,199	70,208,199
1962.....	4,250,942	531,196	4,375,842	5,128,365	44,000,000	76,600,813
1963.....	4,640,993	629,475	6,633,581	4,417,611	42,375,911	80,259,750
1964.....	4,657,737	608,923	6,562,341	4,699,826	44,500,000	76,917,396
1965.....	4,258,678	412,064	6,638,138	4,569,025	45,101,021	88,564,687
1966.....	3,599,421	4,989,997	8,109,366	5,367,393	45,876,782	94,123,982
1967 ^a	2,543,000	950,000	5,760,000	8,390,000	45,650,000	98,760,000

	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1958.....	9,997,546	5,380,151	13,226,668	13,216,976	160,210,945	96,282,363
1959.....	9,281,553	5,898,136	13,271,695	17,064,615	185,123,746	104,651,461
1960.....	10,860,566	8,952,539	13,385,970	15,669,293	192,074,498	111,163,886
1961.....	7,402,385	7,626,197	12,591,944	14,279,191	170,750,947	104,654,132
1962.....	9,692,025	5,317,336	13,469,848	17,879,395	181,245,762	118,603,283
1963.....	9,653,471	7,368,017	16,139,744	17,451,950	189,570,503	123,854,254
1964.....	9,871,553	9,266,648	16,777,687	19,929,117	193,791,358	125,232,132
1965.....	10,462,840	8,808,104	14,377,337	22,068,370	205,260,264	133,819,824
1966.....	9,675,796	8,314,360	12,886,213	24,295,400	217,238,710	151,525,102
1967 ^a	12,060,000	8,100,000	14,920,000	24,770,000	221,900,000	158,129,000

Cement.—The 7,714,000 tons of cement produced in Canada in 1967 represented a decrease of 13.5 p.c. from 1966. The value, at \$146,400,000, constituted 3.3 p.c. of the total value of mineral production.

In 1967 a new cement kiln was installed in each of the two cement plants in British Columbia—Lafarge Cement of North America Ltd. increased the capacity of its plant at Richmond on Lulu Island to 3,500,000 bbl. and Ocean Cement Limited raised the capacity of its Bamberton plant to 4,000,000 bbl. On the other hand, for economic reasons, the Port Colborne plant of Canada Cement Company, Limited, was closed. These changes raised the total rated capacity of the Canadian cement industry by the end of 1967 to 75,270,000 bbl. annually, an increase of about 2.5 p.c. over 1966. With the addition of a 5,000,000-bbl. dry-process kiln to the St. Lawrence Cement Company plant at Clarkson, Ont., and a 2,000,000-bbl. St. Mary's Cement Co., Limited plant at Eowmanville, the total annual capacity of the Canadian cement industry will be 82,270,000 bbl. by the end of 1968.

23.—Producers' Shipments and Value, Imports, Exports and Apparent Consumption of Cement, 1958-67

NOTE.—Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Shipments (sold or used)		Imports ¹	Exports	Apparent Consumption ²
	tons	\$	tons	tons	tons
1958.....	6,153,421	96,414,142	41,550	141,250	6,053,721
1959.....	6,284,486	95,147,798	29,256	303,126	6,010,616
1960.....	5,787,225	93,261,473	22,478	181,117	5,628,586
1961.....	6,205,948	103,923,644	1,381	249,377	5,957,952
1962.....	6,878,729	113,233,726	2,973	219,164	6,662,538
1963.....	7,013,662	118,614,929	160	272,803	6,741,019
1964.....	7,847,384	130,704,220	250	297,660	7,549,965
1965.....	8,427,702	142,523,169	15,577 ³	334,887	8,108,392
1966.....	8,930,552	156,300,622	4	407,395	8,523,000
1967 ^p	7,714,356	146,401,454	4	328,018	7,386,338

¹ Standard portland cement, other than white.

² Shipments plus imports less exports. ³ Imports are assumed to be relatively small.

⁴ Includes imported clinker.

Stone.—Stone quarrying and stone products—the two main divisions of the stone industry—had an output valued at almost \$104,500,000 in 1967. Stone quarrying comprises the production of rough blocks and crushed materials from ledgerock deposits and intrusive and extrusive igneous deposits. Dimension stone products, including dressed building, ornamental and monumental stones, flagstone, curbstone and paving block, account for approximately 7 p.c. of the total value of stone production. Crushed stone products, consisting of materials used for concrete aggregate, railway ballast, road metal, rubble and rip-rap, terrazzo, stucco and artificial stone, etc., account for about 78 p.c. of the total value. The remaining 15 p.c. is used in the chemical and allied industries.

24.—Producers' Shipments of Stone,¹ by Province, and Total Value, 1958-67

Year	Newfound- land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec
	tons	tons	tons	tons	tons
1958.....	282,439	..	435,047	2,100,687	16,963,511
1959.....	352,231	1,700,000	1,393,663	2,119,136	20,437,243
1960.....	380,843	750,000	914,937	1,883,867	20,394,509
1961.....	322,820	225,000	1,021,880	2,957,886	22,648,010
1962.....	227,707	225,000	548,834	2,950,906	24,173,016
1963.....	382,260	225,000	457,525 ¹	4,416,799	30,003,825
1964.....	285,357	350,000	504,434	3,058,061	37,805,163
1965.....	174,985	225,306	429,078	2,139,517	44,159,242
1966.....	153,000	200,000	605,458	3,544,301	48,964,155
1967 ^p	77,600	300,000	603,116	3,573,497	48,849,204

¹ Excludes limestone used to make lime or cement.

24.—Producers' Shipments of Stone,¹ by Province, and Total Value, 1958-67—concluded

Year	Ontario	Manitoba	Alberta	British Columbia	Canada	
					Quantity	Value
	tons	tons	tons	tons	tons	\$
1958.....	15,756,560	540,703	91,882	1,985,818	38,156,647	55,582,929
1959.....	17,288,796	526,696	528,961	2,092,804	46,439,535	60,958,784
1960.....	17,938,583	673,598	167,201	2,255,911	45,359,449	60,640,621
1961.....	18,361,843	594,921	96,753	2,709,691	48,938,804	66,567,668
1962.....	18,797,648	943,765	105,695	2,580,914	50,553,485	68,866,358
1963.....	20,402,614	3,693,144	138,894	2,935,268	62,655,329	79,883,419
1964.....	23,845,993	1,035,248	129,364	2,780,738	69,794,358	86,882,683
1965.....	24,659,053	970,536	167,782	3,832,606	76,758,105	94,847,021
1966.....	25,702,843	2,022,876	144,433	3,537,321	84,874,387	104,987,366
1967 ^p	25,036,351	1,836,507	180,444	3,196,040	83,652,759	104,412,290

¹ Excludes limestone used to make lime or cement.

Clay Products.—Common clays and shales occur in most regions of Canada and are the principal raw materials used for brick and tile manufacture. Deposits of high-quality argillaceous materials used for such products as papers, refractories, high-quality white-ware and stoneware products are relatively scarce in Canada. Consequently, china clay (kaolin), fire clay, ball clay and stoneware clay are mostly imported. The value of production of clay products from domestic clays reached a record \$43,549,000 in 1967.

Table 25 refers to production of such products as brick and tile made from domestic clays. Imports of these products, mainly from the United States, have a low value. Other clay products such as floor and wall tile, sanitary ware, pottery and dinnerware, and electrical porcelain contain a large proportion of china clay and ball clay. The value of white-ware products produced in Canada and using such materials exceeded \$32,000,000 in 1967.

25.—Value (Total Sales) of Producers' Shipments of Clay Products, by Province, 1958-67

Note.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	\$	\$	\$	\$	\$
1958.....	58,282	1,509,536	629,921	10,675,463	22,786,291
1959.....	68,000	1,638,789	743,966	10,374,162	22,174,895
1960.....	83,435	1,673,618	705,366	8,093,038	20,191,325
1961.....	75,890	1,582,153	744,293	8,195,790	19,036,556
1962.....	142,000	1,712,503	822,400	7,450,131	20,146,786
1963.....	92,120	1,337,430	623,166	6,852,660	21,819,687
1964.....	99,038	1,541,117	697,974	6,839,772	23,723,512
1965.....	72,717	1,828,385	667,704	6,520,653	25,130,709
1966.....	172,700	1,525,004	618,651	6,278,308	25,799,667
1967 ^p	281,000	1,373,333	568,991	7,139,284	24,871,787
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
	\$	\$	\$	\$	\$
1958.....	682,943	1,158,803	2,569,170	1,639,494	41,709,903
1959.....	618,550	1,374,834	3,572,920	1,949,332	42,515,448
1960.....	813,135	1,130,352	3,551,682	1,984,607	38,226,538
1961.....	623,966	1,115,474	3,517,473	2,091,353	36,982,948
1962.....	621,275	1,354,635	3,445,687	2,121,461	37,816,878
1963.....	594,072	1,044,721	3,452,835	2,337,603	38,154,294
1964.....	519,726	1,336,383	3,787,609	2,285,454	40,530,585
1965.....	482,620	1,380,916	3,555,006	3,198,872	42,837,582
1966.....	487,172	1,395,489	3,422,614	3,256,480	42,956,085
1967 ^p	501,700	1,231,470	4,121,742	3,460,112	43,549,419

Subsection 3.—Petroleum and Natural Gas

The search for petroleum in Canada broadened in 1967 to include a vast area extending from the Canadian Arctic Islands southward to the Pelee Point area of Lake Erie, and from coast to coast. The formation late in 1967 of Panarctic Oils Limited, a government-industry syndicate, ensured active exploration of the Arctic Islands for at least the next three years, including the drilling of a number of deep wells. For the first time, offshore prospects off Canada's West Coast and in Hudson Bay were evaluated by drilling, while a third well was completed off Canada's Atlantic seaboard. However, no commercial successes have resulted to date and the western Canadian provinces remain the primary sources of production and reserves in Canada.

Due in part to increased demand resulting from the disruption of Middle East crude oil supplies, production of liquid hydrocarbons rose 9.5 p.c. to 1,100,000 bbl. daily in 1967; crude oil output amounted to 960,000 bbl. daily, with natural gas liquids making up the remaining 149,000 bbl. Production increased in Alberta and British Columbia but declined in Saskatchewan, Ontario and the Northwest Territories. In the face of record production levels, recoverable reserves of liquid hydrocarbons in Canada were increased 16.9 p.c. to 9,547,792,000 bbl. at the end of 1967, made up of 8,168,924,000 bbl. of crude oil and 1,378,868,000 bbl. of natural gas liquids. Alberta accounted for most of the increase, and now has more than 87 p.c. of the total proved liquid hydrocarbon reserves in Canada.

Net new production of natural gas rose 9.7 p.c. in 1967 to 4,032,000 Mcf. daily, as a result of sharp increases in exports and continuing growth in domestic demand. Proved remaining marketable reserves of gas were increased to 45,682,000,000 Mcf. at the end of 1967, representing a 5.1-p.c. increase during the year.

The total number of wells drilled in Canada declined for the third successive year to 3,021 wells (12,851,897 feet), a 5.2-p.c. decline from 3,186 wells (14,015,164 feet) from 1966. Although exploratory drilling was slightly lower, most of the decline occurred in development drilling.

26.—Quantity and Value of Producers' Shipments of Crude Petroleum, by Province, 1958-67

NOTE.—Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Year	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bbl.	\$	bbl.	\$	bbl.	\$	bbl.	\$
1958.....	15,189	21,265	778,341	2,623,000	5,829,226	14,415,676	44,626,148	96,704,863
1959.....	14,479	20,271	1,001,580	3,194,000	5,056,075	11,619,872	47,442,498	97,731,546
1960.....	14,148	19,807	1,005,030	3,150,065	4,764,045	10,690,384	51,908,428	103,957,009
1961.....	12,024	16,833	1,149,087	3,546,740	4,480,348	10,156,000	55,860,104	115,719,791
1962.....	10,333	14,466	1,134,534	3,661,174	3,926,683	9,435,819	64,432,411	141,783,520
1963.....	7,381	10,333	1,205,376	3,459,429	3,771,163	9,188,635	71,303,893	160,226,978
1964.....	4,688	6,516	1,246,682	4,014,316	4,417,224	10,296,549	81,377,641	186,171,931
1965.....	4,103	5,744	1,279,321	4,093,318	4,946,509	12,252,503	87,775,205	200,478,568
1966.....	6,836	20,508	1,323,781	4,236,099	5,230,712	12,956,474	93,218,119	212,723,748
1967 ^a	9,000	27,000	1,228,000	3,870,000	5,567,000	13,894,500	92,915,500	212,033,500
Alberta		British Columbia		Northwest Territories		Canada		
Quantity		Value	Quantity	Value	Quantity	Value	Quantity	Value
bbl.		\$	bbl.	\$	bbl.	\$	bbl.	\$
1958.....	113,277,847	283,262,592	512,359	1,022,156	457,086	698,266	165,496,196	398,747,818
1959.....	129,967,312	306,917,803	866,234	1,583,129	430,319	1,025,914	184,778,497	422,092,535
1960.....	130,506,968	302,841,423	867,057	1,626,590	468,545	641,219	189,534,221	422,926,497
1961.....	157,811,712	355,530,845	1,017,826	1,859,873	516,979	730,160	220,848,080	487,560,242
1962.....	165,124,967	379,830,363	8,914,220	16,872,122	572,004	755,045	244,115,152	552,352,509
1963.....	168,214,054	416,844,350	12,528,681	24,841,518	631,229	633,754	257,661,777	615,204,997
1964.....	175,441,589	450,186,921	11,625,601	23,261,946	586,296	438,549	274,599,721	674,376,728
1965.....	188,298,021	474,385,000	13,470,757	29,759,595	644,998	614,941	296,418,914	721,589,669
1966.....	203,339,433	524,005,719	16,671,328	36,726,936	752,585	842,895	320,542,794	791,512,379
1967 ^a	231,587,000	613,241,500	20,530,500	42,625,500	689,000	792,500	352,526,000	886,484,500

27.—Natural Gas Produced, by Province, and Total Value, 1958-67

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	New Brunswick	Ontario	Saskatchewan	Alberta	British Columbia	Northwest Territories	Canada	
							Quantity	Value
	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	Mcf.	\$
1958...	123,957	16,147,986	18,819,795	239,049,591	63,638,297	24,100	337,803,726	32,057,536
1959...	117,502	16,839,236	33,612,966	297,568,926	69,128,708	67,189	417,334,527	39,609,393
1960...	98,701	16,987,056	36,571,633	383,682,986	85,592,166	39,785	522,972,327	52,196,882
1961...	96,318	14,544,165	37,192,595	500,843,900	103,018,988	41,678	655,737,644	68,421,918
1962...	95,750	15,648,294	38,845,732	770,963,122	121,093,122	56,707	946,702,727	108,641,159
1963...	103,524	15,920,055	39,936,193	943,354,973	118,058,994	51,478	1,117,425,217	150,468,714
1964...	105,055	13,738,588	40,485,795	1,127,083,595	135,496,946	34,297	1,316,944,276	172,966,859
1965...	105,359	12,619,867	42,768,901	1,225,826,579	161,084,296	43,068	1,442,448,070	186,625,459
1966...	97,403	15,537,395	49,867,762	1,090,691,124	185,590,273	46,238	1,341,833,195 ¹	177,631,340
1967 ² ...	104,000	15,548,000	51,817,000	1,180,000,000	217,800,000	41,500	1,465,371,500 ²	198,228,000

¹ Includes 3,000 Mcf. produced in Quebec.

² Includes 61,000 Mcf. produced in Quebec.

Alberta.—The Rainbow Lake-Zama Lake region of northwest Alberta remained a major exploratory area, but activity declined somewhat as reservoir performance and further development in the area led to the downward revision of reserves in some pools. In the Zama Lake area in particular, maximum reservoir thicknesses in the Middle Devonian pools are less than half the 800-foot maximum at Rainbow, and reservoirs appear more limited in areal extent. As a result, there was increased exploration for oil in other areas of the province, particularly in southern Alberta.

Exploration in the Rainbow-Zama region proved up substantial gas reserves associated with the oil occurrences in the area. Tentative plans have been made to extend a pipeline to the area by 1971. Significant reserves of sour gas were indicated in the Mississippian Turner Valley formation at Quirk Creek, west of the historic Turner Valley pool, and encouraging shows of sour gas were also obtained in Upper Devonian Leduc reefs in the Chedderville-Strachan area, 85 miles northwest of Calgary.

The Great Canadian Oil Sands Limited's bituminous sand extraction plant was officially opened on Sept. 30, 1967, but output of synthetic crude from the plant had not reached design capacity of 45,000 bbl. daily by the end of the year because of mechanical and mining problems. In the Cold Lake region of eastern Alberta, a number of companies continued to develop thermal recovery methods for the *in-situ* recovery of heavy oil from the thick sandstones in this area.

The total number of wells drilled in 1967 declined 3.3 p.c. to 1,590. Total footage drilled decreased 6.7 p.c. to 7,741,927 feet, development footage declined 6 p.c. to 3,929,662 feet, and exploratory footage declined 7.4 p.c. to 3,812,265 feet.

Saskatchewan.—Exploratory drilling in Saskatchewan in 1967 surpassed the 1966 level but a sharp drop in development drilling resulted in an over-all 15-p.c. drop in total footage drilled to 3,512,988 feet. Exploratory drilling increased to 471 wells (1,808,695 feet) from 438 wells (1,728,786 feet) in 1966 and development drilling dropped from 671 wells (2,427,774 feet) to 494 wells (1,704,293 feet). Exploratory interest has been centred on prospects in the Mississippian and deeper horizons in the southeastern area of the province, and on the Middle Devonian, Winnipegosis formation in a broad area across central Saskatchewan.

British Columbia.—Although the number of development wells in British Columbia decreased in 1967 from 1966, development footage increased by 10 p.c. to 384,692 feet. Exploratory drilling decreased from 134 wells (687,455 feet) to 114 wells (626,144 feet).

A two-mile step-out well to the 1961 Beaver River major gas discovery was successful, and two other Middle Devonian, Slave Point gas successes were reported in northeastern British Columbia, but exploration and development had been retarded by lack of pipeline facilities to this region. However, Westcoast Transmission Company Limited received approval for increased exports early in 1968, and it is expected that pipelines will be extended from Fort Nelson to tap resources there, thus allowing exploitation of shut-in reserves.

Shell Canada Limited completed three offshore wells in the Barclay Sound area off Vancouver Island's west coast, in the early stages of an eight-to-ten-well offshore exploration program. All three were abandoned after encountering only non-commercial gas shows. In November, the Supreme Court of Canada ruled that Canada had jurisdiction over resources off the British Columbia coast. Offshore acreage under federal permits amounted to more than 15,000,000 acres at the end of 1967, down from 18,000,000 the previous year.

Manitoba.—Drilling in Manitoba experienced a strong upturn in 1967, as aggregate footage drilled rose 46 p.c. to 213,660 feet. Most of the increase was in development wells which increased from 57 (144,807 feet) in 1966 to 87 (213,660 feet). An exploratory test, completed on the west shore of Hudson Bay, was encouraging from the viewpoint that the sedimentary section penetrated was thicker than anticipated, but no commercial hydrocarbon accumulation was found. Production of oil in Manitoba rose 7 p.c., a continuation of the upward trend which started with the introduction of secondary recovery techniques in 1963.

Offshore acreage in Hudson Bay under federal permits increased slightly to 53,800,000 acres.

Yukon Territory, Northwest Territories and Arctic Islands.—In these northern areas, total footage drilled, all exploratory, rose slightly from 28 wells (121,620 feet) in 1966 to 40 wells (128,944 feet) in 1967. Exploratory drilling was carried out in the region of the 1966 Pointed Mountain gas discovery, 30 miles north of the Yukon-British Columbia border. The region from the Beaver River area on the Yukon-British Columbia border to Pointed Mountain in the Yukon is expected to be a major source of gas for Westcoast Transmission Company when pipeline facilities are completed.

Late in 1967, a syndicate of 20 private corporations and the Canadian Government formed a company, Panarctic Oils Limited, to pioneer mineral exploration in Canada's Arctic Islands. With initial financing of \$20,000,000, the first three-year program of operations consists of a systematic exploration program, including the drilling of several exploratory oil wells.

Eastern Canada.—In Ontario, the total number of wells drilled increased but total footage drilled declined 4.6 p.c. to 219,246 feet. A total of 146 wells were drilled, of which six were completed as oil wells and 59 were completed as gas wells. Interest centred on Lake Erie following Silurian gas discoveries near Port Burwell and Pelee Point, and all available acreage in Canadian waters was taken under permits by operating companies.

One exploratory test was drilled on Sable Island, 150 miles east of the Nova Scotia mainland. It was drilled to 15,106 feet and obtained encouraging, but non-commercial, gas shows. Shallow drilling was carried out in New Brunswick and a number of companies completed magnetic, seismic and geological surveys to evaluate permits onshore and offshore. Offshore acreage under federal permits amounted to 151,000,000 acres, a substantial increase from 124,600,000 acres in 1966.

Petroleum Refining and Marketing.—Daily crude oil refining capacity continues to increase year by year, the total in 1967 reaching 1,209,000 bbl. Canada is the ninth largest industry in the world in terms of crude treating capacity. Moreover, it is unquestionably one of the most advanced in terms of down-stream refinery units such as catalytic cracking and catalytic reforming.

28.—Crude Oil Refining Capacity, by Region, as at Jan. 1, 1955, 1966 and 1967

Region	1955		1966		1967	
	bbl./day	p.c.	bbl./day	p.c.	bbl./day	p.c.
Atlantic Provinces.....	18,300	3.0	127,000	11.1	128,500	10.6
Quebec.....	210,000	33.9	375,200	32.9	401,200	33.2
Ontario.....	148,800	24.1	324,300	28.4	352,400	29.1
Prairie Provinces and Northwest Territories.....	174,850	28.3	214,400	18.8	217,450	18.0
British Columbia.....	66,500	10.7	100,200	8.8	109,900	9.1
Canada.....	618,450	100.0	1,141,100	100.0	1,209,450	100.0

In 1967, Canadian refineries received 1,062,000 bbl. of crude oil, of which amount domestic oil accounted for 58 p.c. Imported crude, on an average daily basis, amounted to 447,000 bbl. with 286,000 coming from Venezuela, 47,000 from Iran, 37,000 from Saudi Arabia, 25,000 from Nigeria, 14,000 from Trinidad, 14,000 from Libya, 10,000 from Iraq, 10,000 from the United States and 4,000 from Kuwait. Imports of refined products increased to 187,000 bbl. daily, a gain of 24,000 bbl. daily over the 163,000 bbl. for 1966. Light and heavy fuel oil and diesel oil comprised the major categories of imports.

29.—Domestic and Foreign Crude Oil Received at Canadian Refineries, by Region 1955, 1966 and 1967

Region	1955		1966		1967	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day	bbl./day
Atlantic Provinces and Quebec.....	—	210,423	17	432,924	13	445,666
Ontario.....	106,446	27,275	311,356	1,451	309,964	1,157
Prairie Provinces and Northwest Territories.....	133,961	—	197,420	—	202,659	—
British Columbia.....	47,431	—	94,449	—	102,053	—
Canada.....	287,838	237,698	603,242	434,375	614,689	446,823

Domestic demand in 1967 was made up of 1,182,000 bbl. daily of sales to consumers and 81,000 bbl. daily used in the petroleum industry, a total of 1,263,000 bbl. daily compared with the 1966 level of 1,184,000 bbl. Exports of crude oil, all to the United States, averaged 415,000 bbl. daily and refinery product exports amounted to 8,000 bbl. daily.

Natural Gas Processing and Marketing.—Natural gas consumers and gas pipeline companies require gas that contains relatively little non-flammable content and is free of noxious components. Since a large proportion of gas produced in Canada does not meet market specifications, there is a major gas processing industry located mainly in Alberta which extracts ingredients that, in themselves, are valuable. These by-products include the natural gas liquids such as propane, butane and pentanes plus and elemental sulphur. At the end of 1967 there were 120 gas plants operating in Canada—109 in Alberta, five in British Columbia, eight in Saskatchewan and four in Ontario. The addition in 1967 of 1,189,000 Mcf. daily of raw gas treating capacity raised the total to 7,687,000 Mcf. daily.

Of the 1,698,000,000 Mcf. of Canadian gas plus imports of 70,500,000 Mcf. available for consumption in 1967, 513,000,000 Mcf. went to the United States, 695,000,000 Mcf. was sold to residential, commercial and industrial consumers in Canada, and the remainder was used by the industry in pipeline, field or plant use. In total, 932,000,000 Mcf. of gas was consumed in Canada compared with 835,000,000 Mcf. in 1966.

Table 30 shows sales of natural gas in Canada as well as the number of customers. During 1967, natural gas supplied roughly 20 p.c. of Canada's energy requirements.

30.—Sales of Natural Gas in Canada, by Province 1967, with Totals for 1963-67

Province	Sales		Value per Mcf.	Customers Dec. 31
	Quantity	Value		
	Mcf.	\$	\$	No.
New Brunswick.....	62,024	185,586	2.99	1,975
Quebec.....	35,288,737	36,765,486	1.04	215,965
Ontario.....	279,118,011	235,218,715	0.84	729,789
Manitoba.....	41,711,602	27,465,902	0.66	110,131
Saskatchewan.....	68,553,583	30,788,050	0.45	130,514
Alberta.....	195,197,949	63,475,295	0.33	278,154
British Columbia.....	75,090,768	61,611,329	0.82	212,015
Canada, 1967.....	695,022,674	455,510,363	0.66	1,678,543
1966.....	635,514,622	416,212,202	0.65	1,626,783
1965.....	573,016,223	369,306,826	0.64	1,569,538
1964.....	504,503,388	327,982,720	0.65	1,506,502
1963.....	451,598,298	287,686,684	0.64	1,449,290

Subsection 4.—Coal

During 1967 there was considerable optimism in the Canadian coal industry. Production remained about the same as for the previous year but there was a significant increase in the total export of western Canadian coking coal to Japan with prospects good for substantially increasing these exports. Rationalization of the coal industry in Eastern Canada under federal and provincial government policies was undertaken and directed toward more viable coal production in that region. Increased mechanization of production, beneficiation and quality control as well as improvements in coal transport were undertaken by the industry in an effort to supply higher quality products at reduced costs.

The governments continued to sponsor research and development through financial grants to groups across Canada with skills in this area of study. In the research programs so assisted, a reasonable balance was maintained between projects of early and practical value to the industry and those of a basic research nature. Government, university and industry research institutions undertook and continued investigations concerned with mining, processing and utilization of coals. Efforts were concentrated on sulphur and ash reduction and on studies of the coking properties of coals in relation to their preparation for export markets and use in the metallurgical industry.

The operators of bituminous coal mines in Western Canada continued projects for modernizing and expanding their operations. There was a revived and vigorous interest by new companies in opening additional mines as a result of active interest by the metallurgical industry of Japan in the coking coals. This has given rise to substantially improved railway haulage of coals to the coast and improvement of west-coast bulk-loading facilities.

Payments by the Federal Government through the Dominion Coal Board to assist the movement of coal to markets increased to \$35,722,532 in 1967. Subvention assistance amounting to about \$3,500,000 was applied to the export of more than 1,200,000 tons of coal from the Crowsnest area of Alberta and British Columbia. Subventions earned during 1967 under the Atlantic Provinces Power Development Act, 1958 totalled almost \$2,600,000.

Production, Employment and Consumption.—Total coal output in Canada in 1967 amounted to 11,395,754 tons. The average value for all types was \$7.26 a ton at the mine. The number of man-days employed by the industry was 1,981,142 compared with 2,199,678 in 1966, a decrease of 9.9 p.c.

Of the total coal produced in 1967, 59 p.c. was bituminous with an average value of \$10.95 at the mine; subbituminous coal produced in Alberta accounted for 23.4 p.c. with an average value of \$2.06 a ton; and lignite, produced only in Saskatchewan, accounted for 17.6 p.c. with an average value of \$1.80 a ton. Production of bituminous coal was about

the same as in 1966, subbituminous increased 2.9 p.c. and lignite was down 3.4 p.c. Strip mining accounted for 51.9 p.c. of the output. The output per man-day from strip mines was 39,323 tons and that from underground mines 3,514 tons. The over-all output per man day was 22,089 tons.

Consumption of coal in Canada in 1967 was 25,878,083 tons, more than 62 p.c. of which was imported. Of the imported coal, 96.7 p.c. was bituminous coal used mainly in Ontario and Quebec. Imports were 1.9 p.c. lower than in 1966. The production of coke used 5,856,056 tons of coal, of which 94.7 p.c. was imported. Consumption of coal for commercial and household heating decreased 22.2 p.c. to about 1,350,000 tons and consumption by industrial consumers, including thermal-electric power plants, amounted to 15,845,571 tons, an increase of 4.6 p.c. Use of coal in thermal-electric power plants is estimated at 9,100,000 tons, an increase of about 15.6 p.c. over the previous year and representing about 35.2 p.c. of the total coal consumed in Canada. Exports amounted to 1,338,000 tons in 1967, most of it from Western Canada going to Japan and the United States for blending in the manufacture of metallurgical coke. The manufacture of briquettes decreased to an estimated 41,500 tons.

31.—Coal Production, by Province, and Total Value, 1958-67

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	\$
1958.....	5,269,879	790,719	2,253,176	2,519,901	849,091	4,344	11,687,110	79,963,327
1959.....	4,391,829	1,003,387	1,947,380	2,528,755	751,492	3,879	10,626,722	73,875,895
1960.....	4,570,240	1,028,064	2,170,797	2,391,699	843,868	6,470	11,011,138	74,676,240
1961.....	4,300,758	887,903	2,208,851	2,027,826	964,663	7,703	10,397,704	70,052,683
1962.....	4,204,779	815,529	2,256,306	2,087,310	913,196	7,649	10,284,769	69,160,213
1963.....	4,554,944	886,336	1,873,556	2,289,943	962,684	8,231	10,575,694	71,756,581
1964.....	4,293,130	1,003,362	1,994,039	2,971,133	1,050,430	7,229	11,319,323	72,735,085
1965.....	4,134,161	996,328	2,063,933	3,413,928	971,465	8,801	11,588,616	75,901,126
1966.....	3,854,534	898,315	2,078,165	3,467,254	1,087,631	5,670	11,391,569	81,559,794
1967.....	3,738,487	837,963	2,008,147	3,601,559	1,207,686	1,912	11,395,754	82,759,916

32.—Consumption of Canadian and Imported Coal in Canada, 1958-67

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1921 edition.

Year	Canadian Coal ¹		Imported Coal 'Entered for Consumption' ²				Grand Total	Consumption per Capita
			From United States	From Britain	Total ³			
	tons	p.c.	tons	tons	tons	p.c.	tons	tons
1958	11,054,757	43.9	14,089,557	65,275	14,154,121	56.1	25,208,878	1.48
1959	10,589,263	43.1	13,861,676	96,814	13,958,996	56.9	24,548,259	1.41
1960	9,973,308	42.9	13,211,493	65,375	13,276,599	57.1	23,249,907	1.31
1961	9,572,805	44.3	12,253,272	53,226	12,057,086	55.7	21,629,891	1.19
1962	9,510,293	43.4	12,583,618	30,571	12,377,965	56.6	21,888,258	1.18
1963	9,504,903	42.0	13,348,913	21,101	13,105,686	58.0	22,610,589	1.20
1964	10,080,243	40.0	14,983,536	5,578	14,987,656	59.8	25,067,899	1.29
1965	10,181,171	38.0	16,590,348	5,045	16,593,547	62.0	26,774,718	1.35
1966	10,117,756	38.1	16,436,755	—	16,435,111	61.9	26,552,867	1.32
1967	9,764,754	37.7	16,114,190	—	16,113,329	62.3	25,878,083	1.26

¹ The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in making coke, etc., less the tonnage of coal exported.

² Imports of briquettes are not included in this table but are shown separately in Table 33.

³ Deductions have been made from this column to take account of foreign coal re-exported from Canada; bituminous coal ex-warehoused for ships' stores was deducted for the years prior to 1964.

33.—Imports of Anthracite, Bituminous and Lignite Coal and Briquettes, and Exports of Domestic Coal, 1958-67

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Imports of Coal and Briquettes					Exports of Domestic Coal	
	Anthracite	Bituminous ¹	Briquettes ²	Totals			
	tons	tons	tons	tons	\$	tons	\$
1958.....	1,556,018	12,934,262	41,820	14,533,135 ³	88,552,326	338,544	2,907,513
1959.....	1,603,909	12,621,429	24,521	14,260,639	84,808,838	473,768	3,582,313
1960.....	1,297,467	12,250,832	15,528	13,580,364	77,174,112	852,921	6,789,163
1961.....	1,058,157	11,237,629	9,664	12,316,162	71,717,030	939,360	8,541,679
1962.....	914,336	11,687,898	7,608	12,621,797	74,307,252	901,560	8,590,693
1963.....	847,326	12,513,423	6,445	13,376,851	78,837,274	1,056,788	9,916,398
1964.....	653,838	14,333,991	7,140	14,996,254	86,472,326	1,283,612	11,936,285
1965.....	640,161	15,954,002	7,600	16,602,993	126,200,054	1,225,994	12,671,785
1966.....	594,193	15,842,562	5,045	16,441,800	140,985,031	1,228,820	13,202,161
1967.....	525,645	15,588,545	10,888	16,125,078	145,523,876	1,338,353	15,091,852

¹ Includes coal ex-warehoused for ships' stores.

² Coal or coke.

³ Includes small amounts of lignite.

Provincial Production.—Coal is produced in five provinces of Canada and in the Yukon Territory. In 1967 *Nova Scotia* produced 32.8 p.c. of the total Canadian output, although its output was 3.0 p.c. lower than in 1966. High-volatile bituminous coking coal was produced in the Sydney, Cumberland and Pictou areas and non-coking, high-volatile bituminous coal was produced in the Inverness area, all from underground mines. The average value at the mines was \$13.82 a ton and the output per man-day was 2.74 tons. About 58.4 p.c. of *Nova Scotia's* coal production was shipped to other provinces, mainly to Quebec and Ontario to be used for industrial purposes; a small amount was exported to the Island of St. Pierre and the remainder was used locally for steam raising, power generation, household and commercial heating and the manufacture of metallurgical coke.

New Brunswick, where production decreased 6.7 p.c. from 1966, accounted for 7.4 p.c. of Canada's total coal production. Output was high-volatile bituminous (coking) coal mainly from underground and strip mines in the Minto area but also from strip mines in the Chipman and Coal Creek areas; more than 85 p.c. is from strip mines. Average output per man-day from strip mines was 5.47 tons and from underground mines 1.84 tons and the coal had an average value at the mines of \$8.94 a ton. About 8.6 p.c. of the production was shipped to Quebec and the remainder was used in the province, mainly for electric power generation.

Saskatchewan's coal production, entirely lignite from strip mines located in the Bienfait and Estevan areas of the Souris Valley, decreased 3.4 p.c. from 1966; it amounted to 17.6 p.c. of the national output. The average output per man-day was 50.60 tons and the average value at the mines was \$1.80 a ton. This is the cheapest source of coal in Canada. The Estevan area serves the provincially owned Boundary Dam thermal-electric power plant which uses a large share of the total lignite production. More than 30 p.c. of *Saskatchewan's* coal production was shipped to Manitoba and Ontario for industrial, commercial and household use; the remainder was used within the province for similar purposes.

Alberta produced 31.6 p.c. of the nation's coal in 1967. The largest output, about 74 p.c., was from the subbituminous mines, which was 2.9 p.c. higher than in 1966. Production of bituminous coal increased 6.6 p.c. and total production 3.9 p.c. About 72 p.c. of *Alberta's* production was from strip mines and the average output per man-day from these mines was 37.63 tons compared with 5.14 tons from underground mines. The average value at the mine of bituminous coal was \$7.40 a ton and of subbituminous coal \$2.06 a ton. Increasing quantities of *Alberta's* subbituminous coals are being employed industrially,

particularly for thermal-electric power generation. About 89 p.c. of the bituminous coking coals, produced in the Crowsnest area of Alberta, was exported to Japan to up-grade the Japanese coal blends for metallurgical use. Alberta shipped 21.8 p.c. of its coal to other provinces—14.0 p.c. to Saskatchewan, 4.6 p.c. to British Columbia and 2.6 p.c. to Manitoba.

British Columbia's coal output in 1967 increased about 11.0 p.c. and amounted to 10.6 p.c. of Canada's coal production. All of the coal was bituminous and most of it came from the Crowsnest area. The coals range from high-volatile to low-volatile coking coals and production was almost equally divided between underground and strip mines. The average output per man-day was 49.23 tons for strip mines and 5.86 tons for underground mines and the average value at the mine was \$6.24 a ton. About 35 p.c. of the production was exported, most of it to Japan; 10.8 p.c. was shipped to Manitoba and 3.8 p.c. to Ontario.

Yukon Territory produced only about 1,900 tons of coal in 1967 from a single underground mine having an average output of 2.84 tons per man-day. The coal was valued at \$8.26 a ton.

FUELS IN CANADA*

The word "fuel", derived from the archaic French *fouaille*, implies a heat source. Up to the present time, mankind has depended for its survival and development on organic fuels but, with the emergence of nuclear energy for civilian use, inorganic fuel is now assuming economic significance.

Fossil fuels with their main component—carbon—will continue to provide the largest range of products from the pure form to compounds that are useful to man. They may even provide nutrition to man if natural foods become scarce. Although the world is benefiting at present by the upsurge in the availability of hydrocarbons, coal as a carbon source should not be discarded. In fact, all fossil fuels in the future may have to contribute collectively to the energy and chemical needs of the world.

The challenge to the bulk use of fossil fuels seems to be nuclear energy which, as has been predicted, may constitute 18 p.c. of the world's energy by the year 2000, by which time the consumption of energy may be quadrupled from the present level of about 5,000 MM metric tons of coal equivalent. The world's present economic uranium resources are considered to be larger than the total usable fossil fuel resources but they are subject to the principal uncertainty—the efficiency of fuel utilization which at present amounts to only about 1 p.c. of the theoretical potential energy. Nevertheless, nuclear energy may make rapid strides in the fields of generation of electric power, district or large-complex heating, and some types of transportation. Higher extractions of uranium and thorium from lower-grade ores and the development of breeder reactors may ensure that the supply of source materials is adequate.

In Canada, the fortuitous occurrence of ores in strategic and geographically favourable locations together with the creation of nuclear technology gives great impetus to the development of nuclear energy. Canada is spending about 15 p.c. of its federal research budget on nuclear research and has trained many nuclear scientists and engineers and hence may be expected to play a role in the world with its nuclear industry integrated from raw material to final product and with its ability to provide engineering skill to countries that need it.

However, a country of Canada's size, in terms of domestic consumption, has problems of distribution, shifts of population and long lines of communication within the country as well as to markets abroad, even as close as those of the United States. Locations of plants, therefore, require more careful evaluation in comparison with the more settled and densely populated countries. For these reasons it is more difficult to predict the future development of atomic-energy plants for generation of electric power in Canada than in advanced countries, small or large.

* Extracted from the 1968 Melchett Lecture (Institute of Fuel, London, England) entitled "Fuels in a Developing Country", prepared by A. Ignatieff, Fellow of The Institute of Fuel, and Deputy Director, Mines Branch, Department of Energy, Mines and Resources, Ottawa.

Fuels may be described as having four distinct though overlapping functions—provision of direct-heat energy; provision of electric power, so far, by indirect conversion; provision of motive power; and provision of source materials for partial or total chemical conversion. An approximate energy-use balance in Canada has been drawn up, demonstrating the relative impact made by the principal fuels, as shown in the following table.

I.—APPROXIMATE ENERGY USE BALANCE IN CANADA, 1965

NOTE.—All coal figures are on bituminous rank basis. SOURCES: Dominion Bureau of Statistics and the Department of Energy, Mines and Resources.

Utilization Area	Quantity Used M=1,000	Energy Source Used	Coal Equivalent MM Metric Tons	Per Cent of Total Energy
Electric power generation.....	144 MMM kwh.	Hydro (81.1 p.c.) Thermal (18.8 p.c.) Coal Natural gas Oil Nuclear (0.1 p.c.)	14.6 7.6 (60 p.c.) 3.0 (24 p.c.) 2.0 (16 p.c.) —	27 19
Road and air transportation....	132 MM bbl. 28 MM bbl.	Gasoline Kerosene	23.4 5.4	29 21
Residential and commercial heat.....	113 MM bbl. 288 MMM cu. ft. 1.9 MM short tons	Fuel oils Natural gas Bituminous coal	24.0 10.9 1.7	37 26
Industrial heat and processing..	83 MM bbl. 205 MMM cu. ft. 270 MMM cu. ft. 7.6 MM short tons 5.5 MM short tons	Fuel oils Natural gas Natural gas ¹ Raw bituminous coal Coal for coke	18.0 7.8 10.1 ¹ 6.9 5.0	48 34
			141	100
Commodity Use—				
Oil.....	—	—	73	52
Natural gas.....	—	—	32	23
Coal.....	—	—	21.5	15
Hydro.....	—	—	14.5	10
			141	100

¹Natural gas losses, process shrinkage, field and pipeline use and gas unaccounted for.

In explanation of the above table, in the *electric-power generation sector* the high efficiency of hydro-electric power plants is reflected in relation to the coal-equivalent calculations. Thermal power plants in Canada use, on the average, the energy equivalent of one pound of coal to generate one kilowatt hour of electric power. The generation figures are gross availabilities at bus bars; line and distribution losses must be taken into account. In the *transportation sector*, UN figures for gasoline and kerosene, including aviation fuel, were used as indicative of oil use in road and air transportation. Diesel oils for railways and marine oils are included in the UN general category of fuel oils. On the other hand, the use of kerosene for lighting and heating is now negligible. Hence the total oil used in Canada in all transportation would be higher than the figure indicated in Table I. In fact, in 1967 oil products used in Canadian transportation have been estimated at 42 p.c. of the total. *Heating and cooking loads* in domestic and commercial buildings are assessed from national figures. Fossil fuels in the *industrial sector* are used for space and process heat and for chemical processing; coal for coke is a sizeable item and is given separately. As regards natural gas, the UN apparently included in the Canadian gas consumption figure the reinjection into wells and losses which, over the years, show a downward trend. Strictly

speaking, only losses should be included and, in that case, the total Canadian energy consumption for 1965 is indicated to have been about 141 MM tons coal-equivalent, as against the UN figure of 150 MM metric tons.

The Status of Fuels and Electric Power in Canada.—Canada is well endowed with energy resources, although they are not evenly distributed. Geography is dominant in the area of energy and fuels as it is in many other aspects of Canadian life. During the past twenty years, the population of the country has grown by about 60 p.c. but energy consumption has more than doubled. The source mix of energy has substantially changed during this period from the dominant position of coal at 60 p.c., oil and natural gas at 30 p.c. and wood and hydro-electric power at the remaining 10 p.c. to today's mix of nearly 75 p.c. provided by hydrocarbons, 15 p.c. by coal, 10 p.c. by hydro-electric energy and less than 1 p.c. by wood.

A great network of collector and trunk lines has been built since the late 1940s to move the hydrocarbon fuels across the country. Without counting looping, the oil pipelines measured 43,400 miles by 1967 and all types of gas pipelines measured 48,210 miles. The latter included one of the longest large-diameter (up to 36 inches) lines in the world running from the Alberta border to Montreal, a distance of 2,200 miles.

The generation of electricity grew by 5 p.c. a year over the past decade. Considerable interconnection of electric transmission systems took place between contiguous Canadian provincial and United States systems, although it will be some time before the national grid, now under study, becomes a reality.

Canada, in fuels, follows a continental export-import policy. Natural gas provides an export supply of approximately 500 MMM cu. ft., oil a deficiency of about 70 MM bbl. and coal a deficiency of about 14,500,000 short tons a year. Small exchanges of electric power are at present maintained but, in future, large blocks may be exported, mainly from Labrador, western Quebec and British Columbia.

Fuels in the Generation of Electric Power.—It is natural that a country exploit first its cheapest source of energy and this in Canada is still hydro-electric power. Until 1950 the contribution from fossil fuels to total generating capacity was less than 10 p.c. but by 1967 it had risen to 9,600,000 kw. or 29 p.c. of a total of 32,900,000 kw.

Coal is still the main contributor to the fuels energy pool of utility and industrial plants in Canada. Where coal is cheaply available, as from certain strip mines, the cost of fuel can be less than one cent per therm, so that coal is important in the generation of electric power. Where hydro power is available, thermal power plants are used as standbys, resulting in relatively low load factors of about 40 p.c. However, with the introduction of larger (100,000 kw.) units, thermal power plants, like nuclear plants of the future, favour base loads. The smaller gas and oil turbine plants operated by both utilities and industries are used principally for peak-load needs. In Canada with its hydraulic resources of about 100,000,000 kw. (not including possible future diversion of watersheds), hydro-electric power will continue to be developed even if the sites are distant from load centres, because of EHV transmission, hydro schemes combined with irrigation, and requirements for large blocks of 2- or 3-mill ($\frac{1}{10}$ cent) kwh. power for electroprocessing. On the other hand, since hydro development is so costly, the trend may increase toward thermal generation of electric power for diversified consumption at 5 to 8 mills/kwh. This would include, of course, nuclear power near load centres and, possibly, small package units in remote locations if the load is sufficient.

That cheap electric power is important to a developing country like Canada, in that it encourages primary processing of natural resources, is demonstrated by Canada's large per capita consumption at 7,360 kwh. (1965), second only to Norway's at 12,567 kwh. The reduction of bauxite, which is not indigenous to Canada, to aluminum illustrates this fact. Most of the electric power generated and used by industry is from hydraulic sources. Some 55 p.c. of the total electricity generated in this country is consumed in

industry and of this about 30 p.c. is used by the mining and metallurgical industries (including iron and steel), the largest use being for smelting and refining of metals. A large segment of the remaining industrial consumption (about 16 p.c. of the total) is used to make pulp and paper for this important export industry.

The above allocation is for the country as a whole. If, however, the consumption is examined in relation to regions and concentrations of population, different figures are obtained. For example, in the Province of Quebec, the ratio of industrial and commercial to residential consumption is as high as five to one, whereas in Ontario, as in the northeast central part of the United States, the ratio is about 2.5 to one.

Comparing some developing countries that have in common with Canada the production and processing of primary resources, the approximate electric-power generation data are given in Table II. Sweden-Canada and South Africa-Australia appear quite similar in relation to electric-power generation as percentage of total energy consumption.

II.—ELECTRICITY USE IN SELECTED COUNTRIES, 1965

SOURCE: United Nations.

Country	Total Electricity Power Generation		Per Capita Output	Hydro-Electric Generation		Total Electric Power Generation ¹ Coal Equiv.	Per Cent of Total Energy
	Type of Plant	Amount		Amount	Coal Equiv.		
		MMM kwh.	kwh.	MMM kwh.	MM metric tons	MM metric tons	
Australia....	Mostly coal.....	37.0	3,257	7.3	0.9	14.3	26
Brazil.....	Mostly hydro.....	30.1	386	25.6	3.2	4.8	17
Canada.....	Mostly hydro.....	144.3	7,360	117.1	14.6	27.0	19
India.....	Hydro and coal.....	36.0	73	17.3	2.6	10.7	13
South Africa..	Mostly coal.....	34.7	1,732	²	...	15.7	29
Sweden.....	Mostly hydro.....	48.3	6,244	46.4	5.8	6.6	19
World.....	Fossil Fuels.. (72 p.c.)	3,348.8	1,020	901.5	113.0	1,215.0	23
	Hydro..... (27 p.c.)						
	Nuclear..... (1 p.c.)						

¹ For thermal generation 1 kwh.=1 lb. coal.

² Negligible.

Fuels in Transportation.—In the past two decades, road and air transportation has advanced significantly. Canada has had a decade of successful diesel-engine operation on its railways, subject to extremes of climate. The lower efficiency of steam-reciprocating engines and the cheaper operation of diesel engines were obstacles that could not be overcome even by brave efforts with coal-fired steam, gas or air turbines. In contrast, transportation of oil products can be economic, even if transportation has to be by container or pipeline over long distances and with government imposts to be tolerated. The growth of air transportation is indicated by the fact that its share of intercity passenger miles is now about 36 p.c. of the total for all public transportation and, at the same time, air freight has increased twenty times to approximately 64,000,000 air-ton miles.

Even if the restrictions in the use of internal combustion engines in the great metropolitan complexes should eventually force their replacement by non-oil prime movers the trend toward vast highway networks in lieu of railway building is a logical projection because of the flexibility and economy of the present and, predictably, the future designs of the internal combustion engine. Canada, despite the long-time existence of two transcontinental railways, has recently completed a 4,000-mile transcontinental highway which is now preferred to the railways for the movement of high-value merchandise. Table II gives comparisons in the use of petroleum products for transportation for selected countries and, using the figures of gasoline and kerosene consumption, the percentages of total national energy for this utilization area indicate the growth of oil use in road and air services. These figures are not particularly accurate because of the kerosene fraction, which may have varying uses in different countries, but the error is not serious. The figures for



Canada has an abundance of energy resources—oil and gas, coal, water power and wood—each, with the exception of wood, contributing an essential but changing portion of the country's energy needs. At present about 75 p.c. of the energy source mix is provided by hydrocarbons, 15 p.c. by coal and 10 p.c. by water power. Twenty years ago hydrocarbons provided 30 p.c., coal 60 p.c. and water power the same 10 p.c.

The processing plant at Fort McMurray in northern Alberta has the capacity to extract 45,000 bbl. of oil a day from the Athabasca tar sands, one of the largest of the known oil reserves in the world. Alberta has 87 p.c. of the proved liquid hydrocarbon reserves in Canada. (top left)

A strip coal mine west of Edmonton. Although the production of coal has been on the downgrade, it is still important in the generation of electric power, particularly where it is cheaply available from strip mines, and in the production of carbon for metallurgy. (top right)

Canada's first full-scale nuclear power station, at Douglas Point on the shore of Lake Huron, went into commercial production in 1967. Two other plants, one in Quebec and one in Ontario, will begin operations between 1970 and 1973. (bottom)

Constant research has resulted in the progressive stepping-up of transmission-line voltage. Power is carried the 375 miles from Quebec's Manicouagan-Outardes hydro complex to Montreal at 735,000 volts. (background)

Three inserted photos by
George Hunter, Toronto
Background photo by
Malak, Ottawa

Brazil, with an area of 3,300,000 sq. miles to Canada's 3,800,000 sq. miles but with a population of 80,000,000 compared with Canada's 20,000,000, illustrates the dependence of large countries on petroleum products for their transportation.

III.—PETROLEUM PRODUCTS USE IN ROAD AND AIR TRANSPORTATION, SELECTED COUNTRIES, 1965

SOURCE: United Nations.

Country	Gasoline and Kerosene		Total Energy Coal Equiv.	Per Cent of Total Energy
	Amount	Coal Equiv.		
	MM metric tons	MM metric tons	MM metric tons	
Australia.....	6.7	10.0	54.5	18
Brazil.....	5.1	7.6	28.6	27
Canada.....	19.1	28.7	150.0	19
India.....	3.8 ¹	5.6	84.0	7
South Africa.....	2.6	3.9	54.4	7
Sweden.....	3.3	4.9	34.8	14
World.....	499.1	748.7	5,231.5	14

¹ High proportion of kerosene used for non-transportation applications.

Residential and Commercial Heat.—Canada must contend with the special circumstances of a severe winter climate that demands heating of residential, commercial and industrial environments during six months of the year. Considering only domestic and commercial (institutional) heating and cooking needs, the demand is nearly two tons of coal equivalent per capita. Industrial heating is merged with process-heat requirements. The efficiency of fuel use is rising and the proportion of individual space heaters to central or furnace-type heaters has fallen rapidly in the past 20 years. Although district heating has not been developed to any extent, centrally heated multi-building complexes are commonplace. Wood for heating purposes has become insignificant, although wood-waste plants (including small thermal-electric plants) are found where this fuel is cheaply available from the lumber industry.

The striking experience in Canada is the lessening of the use of coal, notably in residential and, to a large extent, institutional use and its substitution by oil and natural gas. Commercial and even industrial heating plants are rapidly being converted, because fluid fuels cost less, generally speaking, than domestic coal, and their handling is much more convenient.

Industrial Heat and Processing.—Canada, while in the main a raw-material producer, has nevertheless reached a high degree of affluence due, in part, to its diverse primary resources and, in part, to a burgeoning secondary industry. In 1967, manufacturers, including chemicals but excluding potash, were in the lead at 34 p.c. of Canadian exports; minerals and metals at 30 p.c. were second, followed by forest products at 21 p.c. and agricultural and fish products at 15 p.c. This is in contrast to 1964 when manufacturers were trailing, emphasizing the importance of diversification to Canada. Canada is, however, in the peculiar situation of being neighbour to a highly technologically advanced country (of ten times Canada's population) already oriented to a supply economy so that there is considerable incentive to trade primary products for intermediate or finished goods. With the lowering or abolishing of tariffs, Canada will be obliged to test the economic viability of enlarging the scale of the present manufacturing base or establishing entirely new secondary processing and manufacturing such as secondary chemicals and synthetics. The obstacles to all secondary industry are the incrementally higher unit capital and operating costs, attributable to relatively short production runs and scaled-down process plants. Choosing the correct processing route in converting raw or inter-

mediate materials to useful products affords the greatest challenge to the scientist and the engineer. In each economic environment there exists a situation that dictates the methodology and the degree of processing of raw-feed stocks.

In dealing with fuels, processing can be divided into two areas: beneficiation or processing of fuels themselves, and using fuels in combination with other materials, as in the field of metallurgy. The value of up-graded products is usually much higher in the latter processing than in the former; thus, a ton of coal or iron ore may have a value of \$10, a ton of coke may cost \$20, yet a ton of ordinary steel would be sold for about \$120. In this conversion, capital investment, skill and energy are the main contributors. Petrochemicals is another such case.

Hydrocarbons.—In the processing of fuels themselves, the oil-refining industry is the focus of the highly skilled chemical engineering required in converting 'crudes' and other feed stocks to intermediate and final products supplying a variety of high-quality products for the needs of transportation, heating, generation of electricity, lubrication and highway paving. Through further processing of refinery feed stocks, the industry produces a multitude of petrochemicals at competitive prices.

In the past two decades, Canada has raised its oil production fiftyfold and its refining capacity fivefold to about 85 p.c. of its national needs, and has become one of the largest per capita oil consumers in the world at 800 gallons per annum. Previously, when topping plants predominated, there was a glut of residuals but with the advent of catalytic cracking and hydrofining plants there has been an increase in higher value products, with residuals controlled to market demand. Major international and North American oil companies have been looking ahead to secure reliable supplies of crude. Lower-grade oil and even coal deposits on the Continent are being investigated against eventual continental depletion. The Athabasca oil sands in northern Alberta represent one such large potential resource, from which a plant is designed to produce 45,000 bbl. a day.

The hydrocarbons group of natural gas and associated liquids is the most readily available for use after simple separation of liquids and extraction of sulphur. Both the liquids and the sulphur provide important credits from the deep wet reservoirs. The present annual production is about 45,000,000 bbl. of liquids and 2,000,000 tons of sulphur, the latter placing Canada as the second largest producer of this commodity. Part of the liquids of the processing plants is added to refinery-feed stocks and the other part is used for field use and for sale as LPG bottled gas. Although natural gas offers one of the more useful source materials for chemical application, its relative cheapness and convenience orient it more toward domestic and industrial heating applications. The use of gas is equally divided between industrial and commercial-residential loads.

Coal.—Coal is in a very different position than oil. Basically, the coal industry offers a single product which must be available at low cost and therefore can be purified only to a minimum level of acceptance. Many Canadian deposits have not been exploited because the costs of transportation to markets would be too high. However, it is interesting to note that the recent demands (not only domestically, but from the United States and Australia and for the Japanese iron and steel industry) point up the relative world depletion of coking coals, of low and medium-volatile rank, available at economic prices. For the past eight years approximately 1,000,000 tons of medium-volatile coal has been exported annually to Japan from Western Canada where no adequate markets for coal existed after the conversion of railway transport to diesel power. These mines showed fortitude by searching for suitable markets for carbon in a wide area of largely metallurgical application such as the smelting of both ferrous and non-ferrous concentrates—and even electrothermal reduction of phosphorus. Three of the companies experimented with low-cost non-recovery types of coke ovens to produce coke or char for these specialized markets.* The

* Carbonization in Canada by J. C. Botham from the Proceedings of the Centennial Symposium on the Science and Technology of Coal, March 1967, Fuels and Mining Practice Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa.

Japanese trade now indicates an annual demand of over 5,000,000 tons of coking coal from Canada over the next decade, and more Canadian coking coal is expected to be exported to western United States.

In Canada, where coal mines are located far from industrial centres, most of the mines do not have carbonization plants. With the disappearance of city gas facilities, carbonization is centred around iron and steel plants where the prime product is coke. Oven temperatures and time cycles are controlled by the coke requirements, hence the quality of the resulting tar varies. Canadian tar production of about 30,000,000 gal. per annum—apart from about 10,000,000 gal. of light ends—has a reasonable market as coal-tar pitch in the large aluminum industry which uses about 100,000 tons of Canadian-produced coal-tar pitch each year and imports about 100,000 tons, mostly from the United States. There is little likelihood that the demand for Canadian tar will grow enough to provide large markets for raw coal.

In Canada there will always be an appreciable demand for carbon from coal for metallurgy. Possibly some non-fuel uses can be developed, such as the manufacture of structural carbons, but, instead of anticipating chemicals from coal distillation, the future for bulk use of coal may be a return, at the right time, to the production of synthetic liquid fuels. North American oil companies are increasing their interest in this regard, particularly in liquid fuels from cheaply strip-mined, low-rank, reactive coals.

Petrochemicals.—Although Canada has produced organic chemicals since about the turn of the century, the Second World War gave impetus to its present petrochemical industry. A Crown company (Polymer Corporation) chose Sarnia in southern Ontario as its location for the manufacture of synthetic rubber, because feed stocks were readily available from local refineries, and soon became the largest producer in the then British Empire. Parallel with this, an ammonia plant for nitrogenous explosives, with hydrogen derived from natural gas, was started in Calgary, Alta. After the War, the availability of low-cost natural gas and oil was the reason for locating Canada's second largest petrochemical centre at Edmonton in Alberta.

Based on refinery feed stocks, the Canadian petrochemical industry has grown to include nearly 80 plants with an investment of about \$1,000,000,000 and a total annual value of products (such as synthetic fibres, detergents and coatings) approximating \$300,000,000, derived mostly from refinery sources worth about \$30,000,000. This gives force to the argument in favour of additional processing. This industry now supplies most of the chemicals that in the past were derived by coal carbonization and its development is a stimulus for the secondary processing industries of Canada.

An ammonia-base fertilizer plant would be based on natural gas rather than on coal if these two fuel sources were of equal availability and cost, because of the lower capital and operating costs of an all-fluid plant. The same is true in many other applications. For example, in heating plants, coal-handling equipment requires a larger capital investment than does handling equipment for natural gas or oil. It is usually also argued that the labour cost of coal-fired plants is higher because, even if fully mechanized, they still require larger operating and maintenance staffs.

Metallurgy.—Metallurgy and fuels are natural "partners", particularly in the ferrous industry, because of its size and the opportunities for fuel use from ore reduction to fabrication of metal. Thus, as an example, in 1964, fuels used directly for energy (in addition to coke in blast furnaces) to produce primary metals and fabrications amounted to over 1,000,000 tons of solid fuels (mostly coal), 10,000,000 bbl. of petroleum products, and about 37,000,000 Mcf. of natural gas. The total value of fuels and electricity used was about \$200,000,000. For non-metallic products this value was nearly \$55,000,000.

The Canadian iron and steel industry, with a flourishing iron ore industry as an adjunct, offers another good example of an integrated segment of the economy somewhat analogous to the uranium industry. The iron ore industry, on a part-ownership basis, now produces 40,000,000 tons a year; the primary iron and steel industry produces about 9,000,000

tons of pig iron and 13,000,000 tons of steel a year, mostly in the market areas of Montreal, Toronto and Sault Ste. Marie, which are close to areas of United States use. The Sydney plant in Nova Scotia has not flourished because of its remoteness from markets.

The Canadian iron and steel industry follows modern but classical methods on the whole. In addition, there is production of iron as a by-product of complex ores that are smelted in electric furnaces. There is also considerable research activity in direct reduction and chemical treatment of the more abundant lean and soft iron ores for the production of highly enriched (metallized) materials.

The use of hydrocarbons is increasing in metallurgy, particularly in iron and steel making. Most iron blast furnaces now use oil or natural gas by 'tuyere injection'. Pyrometallurgy is one of the largest solids-heat process industries—much of it, as yet, stepwise—although continuous steel making is emerging. There remains considerable scope for investigating fuel efficiencies and improving energy balances, not only for the present methods but also for methods in prospect.* Process metallurgy provides the opportunity for collective use of fossil fuels for the production of metals, fertilizers and petrochemicals which can be a boon to Canada provided the economics of raw materials and products are favourable.

Fuels Research.—There are no accurate figures available for the amount spent in research and development on fossil fuels, but a rough estimate indicates that about 5 p.c. of the national research and development expenditure is spent in this area, mostly by the oil industry.

In the processing of *hydrocarbons*, the international oil industry can be relied upon to pursue research mainly to produce commodities at competitive prices and affiliates of the international companies continue to establish research laboratories in Canada and should be encouraged in this endeavour by the provisions of the Industrial Research and Development Incentives Act which gives some federal tax relief for such expenditures.

Research in the *coal* sector is supported co-operatively by industry and government.

Co-operation between government and industry is also practised in applied subjects—in the fuels area, for instance, in carbonization, pipeline transportation and combustion. One example is the co-operative research pursued at the Mines Branch, by the Canadian Carbonization Research Association composed of the principal steel and coal companies. Another example is the Solids Pipeline R & D Association, formed on the research and development work pursued by the Alberta Research Council in Edmonton. This Association is composed of a consortium of industrial companies financially assisted by the federal Department of Industry, Trade and Commerce. Pilot operations with a loop of four-inch pipe 3,600 feet long have been carried out.

Canada is fortunate in having a reasonably good supply of scientists and engineers in metallurgy and in mineral technology generally. When the demand for uranium developed in the 1940s, there were enough skilled chemical metallurgists who, with some training, were able to contribute to the 15 or so hydro-metallurgical plants that were commissioned in less than five years. Again, the existence of advanced technology in ferrous metallurgy, with considerable research being pursued by industry and other groups, has developed a generation of skilled metallurgists in the country. The same is true of non-ferrous metallurgy but not on the same scale for each metal or group of allied metals.

Unfortunately, in the fossil fuel area, no Canadian universities (since McGill's abortive attempt 35 years ago) have set up formal courses in fuel engineering such as are available in Britain and, more recently, in Australia. This is probably due in part to the general North American university approach of including fuel subjects in chemical and mechanical engineering courses. Possibly because of this divided approach, little postgraduate research in fuels is being conducted. The Federal Government assists graduate research in univer-

* *Developments in Iron and Steel Processes and Their Effects on Energy Balance* by J. H. Walsh, Paper 2, Symposium in Extraction Metallurgy, April 1967, The Institute of Mining and Metallurgy, London, England.

sities by grants-in-aid programs now totalling approximately \$40,000,000 a year. These funds are additional to the very substantial amounts contributed to universities through agreements with the provincial governments.

Pollution.—The greatest challenge to organic fuels as both energy sources and reagents for heat processes is the reduction and, hopefully, the prevention of the escape of pollutants, both gaseous and solid, into the atmosphere and the concomitant fouling and corrosion of heating and reactor surfaces. Much is heard today of atmospheric, soil and water pollution. Although water pollution is a serious problem, particularly in water-short regions, this evil can be brought under control but atmospheric and consequent soil pollution are much more serious problems which will be hard to solve quickly to avoid serious effect on the existence and expansion of industry in a region or country. The serious implications are the amounts of toxic gaseous and solid effluents still being discharged into the atmosphere where there are large concentrations of population and industry. In unfavourable meteorological conditions the effects have been comparatively serious at least for a section of the population. Nuclear power plants should, of course, be in full development by the end of the century and should alleviate the situation without creating, it is hoped, new problems. Nevertheless, a broad spectrum of heat processes using carbon will be continued and expanded. Reduction of contaminants and, hopefully, suppression at source and dilution by stack-height design are already the immediate preoccupation of many fuel technologists. However, there is an urgent necessity for close co-operative work between government, industry and urban planners for a methodical and consistent approach to a step-by-step resolution of this problem, together with an education campaign to inform the public.

Section 2.—Government Aid to the Mineral Industry

Subsection 1.—Federal Government Aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, geophysical, topographical, geodetic, geographical and marine data which are of basic importance to the discovery and development of the mineral resources of Canada; the provision, through laboratory and pilot-plant research, of technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; financial and technical assistance to the gold-mining industry under the Emergency Gold Mining Assistance Act, and certain tax incentives.

The Department of Energy, Mines and Resources.—The federal Department of Energy, Mines and Resources came into being on Oct. 1, 1966. It embraces all of the functions of the former Department of Mines and Technical Surveys, and new functions pertaining to water and energy resources. Apart from its administrative establishments, the Department is made up of four Groups—Mines and Geosciences, Mineral Development, Water, and Energy Development—each headed by an assistant deputy minister and each aiding the Canadian mineral industry in some way.

The *Mines and Geosciences Group* contains four branches—the Mines Branch, the Geological Survey of Canada, the Observatories Branch and the Surveys and Mapping Branch. The *Mines Branch* is a large laboratory and pilot-plant complex carrying out applied and basic research to discover new and better methods of ensuring mine safety, extracting and refining ores and other minerals, and using metals and minerals in industry and defence. Gratifying results have been achieved in the extraction of metals from ores and in the refining of low-grade crude oil, in the automation of grinding circuits and cyanide leaching processes in gold mills and in the leaching of ground or crushed uranium ores by bacteria. In pyrometallurgy—the extraction of metals by heat—applied research is

concentrated principally on the combination of shaft and electric furnaces for smelting iron ore. In petroleum refining, research concerns hydrogenation, catalytic cracking, and catalyst development. This work is highly significant because of the opening-up of unconventional sources such as the Athabasca tar sands and the so-called Colorado oil shales, whose economic importance has been recognized by the Mines Branch for many years. A close tie-in with producers is maintained in mineral processing in which the emphasis is on the concentration of metallic ores and on the processing and improvement of industrial minerals. In the field of mineral sciences, the physical, chemical, crystallographic and magnetic studies being undertaken on sulphide minerals are of fundamental interest. In physical metallurgy, experiments on new alloy combinations continue to yield valuable practical benefits for Canadian industry.

The Mines Branch, on the advice of experts from industry and the universities, also awards an annual series of research grants in mining sciences to Canadian universities. In 1968, the total amount to be distributed was \$100,000.

The *Geological Survey of Canada* maps and studies the geology of Canada and carries out specialized research to enable its geologists to explain the geology of Canada more effectively. It is the major organization engaged in this work in Canada and its studies extend to all provinces and territories. The Survey maintains a close co-operation with provincial agencies. In the provinces, it endeavours, after prior consultation with the provincial government concerned, to fill in the province's geological framework and thus provide a basis for more detailed mapping by provincial geologists and commercial exploration companies. In areas under development, the Survey does more detailed mapping to supply industry with the geological key to the structures of the orebodies. Each year, the Geological Survey sends about 100 parties into many parts of Canada. They conduct broad regional investigations in the Canadian Shield, the Appalachian and the Cordilleran geosynclinal belts, the sedimentary basins of the mainland and the Arctic Archipelago, and in unconsolidated sediments. As the first systematic reconnaissance of Canada is approaching completion, the country's major geological features are reasonably well known and the Survey is giving increasing attention to fundamental research into field and laboratory problems, identified in the reconnaissance phase, to understand the geological evolution of the country. It publishes the results of its research in memoirs, bulletins, papers and maps, and in numerous scientific technical journals.

The headquarters of the Geological Survey is at Ottawa but it has several regional offices and a recently opened Institute of Sedimentary and Petroleum Geology in Calgary to serve the special needs of the western provinces. The Survey each year awards a large number of grants in support of geological research in Canadian universities; in 1968 these totalled \$263,000.

The *Observatories Branch* carries out much geophysical work of interest to the mineral industry. It studies, collects and publishes, in the form of maps and charts, information on the geomagnetic field in Canada. Most of the information published is obtained from airborne geomagnetic surveys, which have ranged over the whole of Canada and across the Atlantic to Scandinavia. In addition, the Branch has a network of nine permanent geomagnetic observatories, as well as temporary observatories in summer at many widely distributed sites. It also operates a network of 26 seismic stations to assist in the study of the earth's interior and to obtain data for its quantitative assessment of seismic risk throughout Canada. In gravity research, another means of studying the composition of the earth's crust, the Branch is systematically mapping variations in the earth's gravity on a regional basis throughout Canada, including the Arctic and the floors of the Gulf of St. Lawrence and Hudson Bay. The results of all gravity measurements to the end of 1966 are available in a new Gravity Map of Canada on a scale of 1:2,500,000, or about 40 miles to the inch.

No mineral development is possible without accurate, large-scale topographical maps. The *Surveys and Mapping Branch*, in conjunction with the Mapping and Charting Establishment of the Department of National Defence, has completed the topographical mapping of the country at the medium scale of 1:250,000, or about four miles to the inch. About 35 p.c. of the larger-scale mapping at 1:50,000 has been completed in the more settled areas and areas of greater economic importance.

The *Mineral Development Group* conducts broad economic and mineral-commodity studies and gathers comprehensive domestic and world data on all minerals, including energy minerals, for the use of government and private industry. It also administers the Emergency Gold Mining Assistance Act (see p. 649), and the Explosives Act, and co-ordinates the Department's foreign-aid work.

Current activities include regional studies of the mineral economy of a number of provinces; assessment of mineral projects in various parts of Canada for which federal support has been requested; and the safeguarding of Canadian mineral interests through participation in international agencies such as the United Nations Lead-Zinc Study Group, the United Nations Steel Committee, the Organization for Economic Co-operation and Development, the General Agreement on Tariffs and Trade, and the International Tin Council. In collaboration with the Canadian International Development Agency and with the support of industry, the Group is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs, chiefly the Colombo Plan, and is advising on mineral projects undertaken by Canada as an aid to developing countries. The Group publishes an extensive series of reports and other material, and maintains the Mineral Occurrence Index, which is a listing of about 10,000 mineral showings and deposits in Canada that may be consulted by anyone interested. Also of considerable value to the mining industry are the federal-provincial roads programs described in Chapter XIX, Part III, Sect. 2.

The *Water Group* is charged with the Department's responsibility for advising on federal water policies and for co-ordinating the work of federal agencies in water resource management and water pollution. In addition to broad programs of hydrometric, oceanographic and hydrographic work, the Group undertakes and co-ordinates water studies at regional levels, conducts research on the relationships of water and renewable resources and maintains a continuing review of national and regional water policies and programs. The Group is composed of the Marine Sciences Branch, the Inland Waters Branch and the Policy and Planning Branch. Of particular interest to the mining industry are (a) the work being done by geophysicists of the Atlantic Oceanographic Group of the Marine Sciences Branch on the continental shelf off the Atlantic Coast and in the Gulf of St. Lawrence and (b) the study of pollution problems in mining areas, such as in northeastern New Brunswick and on the headwaters of the Saskatchewan River system, by the Inland Waters Branch.

The *Energy Development Group* has broad responsibilities relating to the development of plans and policies for all forms of energy; the development of programs, legislation and agreements to implement those policies; the direction of studies relating to energy sources and requirements; and the co-ordination of policy advice. The Assistant Deputy Minister serves as adviser on over-all plans and policies relating to energy sources and requirements.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of administering, in accordance with regulations of the Governor in Council, any coal subventions or subsidies voted by Parliament.

* Revised under the direction of Hon. J. Watson MacNaught, Chairman of the Dominion Coal Board, Ottawa

The Board is empowered to undertake research and investigations with respect to:—

- (1) the systems and methods of mining coal;
- (2) the problems and techniques of marketing and distributing coal;
- (3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;
- (4) the position of coal in relation to other forms of fuel or energy available for use in Canada;
- (5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;
- (6) the co-ordination of the activities of government departments relating to coal; and
- (7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

The Act authorizes a Board membership of seven, including the chairman. The latter is the chief executive officer, has the status of a deputy minister, spends full time on the Board's business, receives a salary and is in charge of a public service staff. The other members, men of long experience and expert knowledge of aspects and regions of the Canadian coal industry, receive *per diem* payments and travelling expenses while attending Board meetings or while otherwise officially engaged on Board business.

In general, the Board and its staff constitute a central agency through which representations on coal matters are made to the Government from any sector of the industry or the public. Conducting a continuous study of developments and problems within the industry, exchanging information with provincial authorities concerned with coal and with national authorities and agencies in other countries and maintaining a complete file of Canadian coal information, the Board makes recommendations to the Government and reports to Parliament through the Minister of Energy, Mines and Resources.

Since its inception, the Board has worked toward the co-ordination of the activities relating to coal of various government departments and other agencies. Its own responsibilities in research on the mining and utilization of coal have been carried out mainly by the Fuels Research Centre, Mines Branch, Department of Energy, Mines and Resources, although, on occasion, the Board has recommended or commissioned specialized types of research to be conducted outside the government service. As a contribution to the co-ordination of coal research and to the dissemination to the industry of technical information resulting from research, the Board initiated the now annual Dominion-Provincial Conferences on Coal. The Dominion Bureau of Statistics collects much of the statistical information required by the Board.

Government purchases of fuel, which constitute an important outlet for coal, claim a part of the time of the Board's staff in an advisory capacity. Advice on fuel matters is also continuously available to all government departments and agencies. A senior official of the Coal Board is chairman of the Interdepartmental Fuel Committee, which advises on the supply, purchase and utilization of fuel for the Department of National Defence, and of the Dominion Fuel Committee, which is organized along similar lines as an advisory body to other government departments.

The subvention assistance on the movement of Canadian coals, which the Board administers, is authorized by votes of money by Parliament; payments are in accordance with Regulations established by Order in Council. This assistance, which has been provided in varying degrees for the past 30 years, was designed to further the marketing of Canadian coals by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. During the year ended Mar. 31, 1968, a total of 5,323,337 tons of coal was shipped under subvention and \$33,332,465 was paid in assistance. (See also Chapter XXI, Part II, Section 4.)

Emergency Gold Mining Assistance Act.—Under this Act, which came into force in 1948 (RSC 1952, c. 95), financial assistance is provided to marginal gold mines to counteract the effects of increasing costs of production and a fixed price for gold. By enabling gold mines to extend their productive life, the subventions help communities dependent on gold mining to adjust gradually to diminishing support. The application of the Act was extended to Dec. 31, 1970 by an amendment passed on Nov. 28, 1967. The Act is administered by the Department of Energy, Mines and Resources.

An amendment to the Act in 1963, which extended provisions of the Act to Dec. 31, 1967, also introduced a restriction which affects lode gold mines coming into production after June 30, 1965; such mines are eligible for assistance only if the mine provides direct economic support to an existing community, that is, if the majority of the persons employed at the mine reside in one or more of the established communities that are specified in a schedule to the Act. The restriction does not apply to lode mines in production before July 1, 1965 nor to placer gold mines.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to \$10.27 per ounce produced. Gold mines having a cost of production of \$26.50 or less per ounce receive no assistance and those having a cost of production of \$45 or more per ounce receive the maximum rate of \$10.27 per ounce.

Under the current formula, the assistance payable to the operator of a gold mine is computed by adding 25 p.c. to the product of two factors—the “rate of assistance” and the number of “assistance ounces”. The number of assistance ounces is two thirds of the total ounces produced and sold to the Royal Canadian Mint by a mine in a calendar year. The rate-of-assistance factor is two thirds of the amount by which the average cost of production exceeds \$26.50. The rate-of-assistance factor is limited to a maximum of \$12.33 which is reached when the average cost of production rises to \$45 per ounce of gold produced. The average cost of production is determined by dividing the total allowable costs by the total number of ounces produced in the form of bullion from the mine in a calendar year. Only those ounces of gold that have been sold to the Royal Canadian Mint are eligible for inclusion in the assistance-ounces factor. The cost of production includes mining, milling, smelting, refining, transportation and administration costs. Allowances are made for depreciation, pre-production costs and expenditures on exploration and development on the mine property in accordance with the Regulations.

The amounts paid to operators of gold mines to Mar. 31, 1968 for the years 1948-67, inclusive, totalled \$246,360,675 on a production of 55,369,122 oz.t. of gold produced and sold in accordance with the requirements of the Act. The assistance payable for gold produced and sold under the Act in the calendar year 1967 was estimated to be \$15,400,000.

The governors of the central banks of Belgium, Germany, Italy, the Netherlands, Switzerland, the United Kingdom and the United States met in Washington on Mar. 16-17, 1968 to consider problems related to the maintenance of exchange stability. The governors agreed to establish a two-price system for gold. Only gold then held in the official reserves of the seven countries would be bought or sold in transactions with monetary authorities at the existing price of \$35 (U.S.) an ounce. It was agreed that gold in the official reserves would not be sold in any other gold market, nor would gold be purchased from the market by the central banks.

As a consequence of the agreement, Canada may sell newly mined gold only on the free market. The price of gold on the free market is determined by supply and demand.

Following the agreement by the central bankers, the Royal Canadian Mint continued to purchase gold from gold mine operators at a price of \$35 (U.S.). Thus, gold newly mined in Canada continued to be eligible for assistance under the Emergency Gold Mining Assistance Act provided it was sold to the Mint. It should be noted that the amount of assistance payable to a gold mine operator is based on the cost of production of the gold and is not related to its selling price.

Subsection 2.—Provincial Government Aid*

Newfoundland.—The Newfoundland Government, through the Mines Branch of the Department of Mines, Agriculture and Resources, provides several valuable services to those interested or involved in exploration and mining, including: the conduct of a continuing program of mineral assessment designed to encourage development of the mineral resources of the province; the inspection of exploration work carried out on concession areas and the examination of mining operations; the administration of beaches (control of removal of sand and gravel as a conservation measure) and the collection of data relevant to the control of sand removal; the identification of mineral rock specimens submitted by the public and the examination of corresponding occurrences where such is warranted; the dispensing of technical advice, in so far as possible, to those who seek such service (i.e., in hydrological problems and on the availability of quarriable peat moss to be removed by permit); co-operation with the Geological Survey of Canada and other Federal Government agencies; and the preparation and publication of data useful for educational and general informational purposes, including the preparation of mineral and rock sample sets. Geological reports, geophysical maps and compilations of general data pertaining to specific areas are procurable at nominal cost and other information from unclassified files is made available to interested parties. Prospector's or miner's permits are issued by the Mines Branch and mining claims are recorded.

Nova Scotia.—Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosseuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. Mining machinery and equipment to be used in searching for or testing and mining minerals may be made available through the Government. Such equipment is under the direct supervision of the Chief Mining Engineer.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees for loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

New Brunswick.—The Mines Division of the Department of Natural Resources has three Branches. The *Mineral Resources Branch* administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The Branch is responsible for general and detailed geological mapping and investigations. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The *Mines Branch* administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and certain equipment used in mines must be approved. The Branch is responsible also for the collection of mining taxes and royalties and the preparation of statistics on mineral production. The *Water Branch* administers the Water Act, is responsible for the use and allocation of all surface, ground and shore waters and for pollution control measures and implements policy matters as determined by the New Brunswick Water Authority. A Regional Office located at Bathurst, staffed by geologists and inspectors, serves as a recording office for northeastern New Brunswick and another at St. George, staffed by a senior

* Compiled from material supplied by the respective provincial governments.

geologist, conducts regional work and assists exploration companies and prospectors working in the southwestern area. Claim maps and topographical, geological and aeromagnetic maps are available for perusal and distribution.

Quebec.—Through its Director-General of Mines, the Department of Natural Resources is responsible for implementing the Mining Act (SQ 1965, c. 34) and the Mining Duties Act (SQ 1965, c. 35). The directorate includes the following four branches: Geological Services, Mining Services, Laboratory, and Pilot Plant, as well as three divisions: Taxation, Mining Conflicts and Mines Archives.

The Geological Services Branch is concerned with geological exploration, mineral deposits, mapping and hydrogeology. It conducts studies on the geological composition of Quebec territory for the development of mineral resources; following yearly expeditions, detailed reports of the findings and geological maps of different regions are made available for the use of interested persons. A unique system of index plans affords prospectors a precise, quick and valuable technical documentation. The Branch also conducts surveys on underground water and supervises drilling and boring by private companies exploring for hydrocarbons.

The Mining Services Branch is concerned with civil engineering and mining exploration and inspection. It issues prospecting and development permits, grants mining lands for working purposes, and collects fees for mining rights. It is responsible for the inspection of mines, quarries and processing plants to ensure that operations are consistent with regulations and to ensure the safety of mine workers. A trained rescue crew of about 375 members operates as three main groups and nine secondary groups. In addition, all workers in active underground mines are trained in rescue operations. The Department undertakes the construction and maintenance of mining roads as authorized under the Mining Act; it has constructed and paid the full cost of certain highways leading to new mining districts. In addition, to avoid the establishment of slums in the vicinity of mining enterprises, the Department regulates the use of the land and authorizes the building of well-organized residential areas.

Laboratories, operated for the use of prospectors, geologists, engineers and mine operators, include equipment for mineralogy, petrography, the dressing of ore, wet and dry assays, spectrography or X-ray photography. Mineral determinations are made free of charge but the assaying of ore content is subject to a fee; free coupons are issued by the Department to be used by prospectors for payment of assays. The laboratories have patented 12 new processes for the extraction and treatment of minerals and, because of the development of such new metallurgical processes, certain minerals once deemed valueless are now of great commercial importance.

The Taxation Division levies duties on mining operations as stipulated in the Mining Duties Act. The Mining Conflicts Division verifies the existence or the validity of claims as provided for in Part VI of the Mining Act. The maintenance and custody of mining records is the responsibility of the Mines Archives Division.

To provide for the future development of the mining industry, scholarships are granted to students wishing to follow a career in geology, mining and metallurgical engineering, as well as to students in hydrology or other relevant fields of science (hydro-electricity, hydraulics or meteorology). The Department, in co-operation with universities in Quebec and Montreal, gives yearly courses in prospecting and lectures are given by departmental geologists and engineers at various points in the province.

Ontario.—The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province. The Mining Lands Branch of the Department handles all matters dealing with the recording of mining claims, assessment work, etc., and the preparation of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date, showing lands open for staking and recorded and patented claims therein. District Mining Recorders maintain

offices at strategic locations throughout the province. The Geological Branch carries on a continuing program of geological mapping and investigations and prepares, for the use of the public, detailed reports and maps of the areas studied. In co-operation with the Geological Survey of Canada, a program to fly and map the province by airborne magnetometer surveys will be completed this year. In many active areas of the province resident geologists gather and make available to the public information concerning geological conditions, exploration and development within their respective districts. A geologist specializing in industrial minerals investigates methods of treatment and recovery of such minerals and compiles data on the uses, specifications and markets for such products. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

The Laboratory Branch provides assay and analytical services and conducts mineralogical investigations to aid in the discovery and development of mineral deposits. Its services are available to the mining industry and the public at large. The Temiskaming Testing Laboratory, situated at Cobalt, operates a bulk sampling plant and assay laboratory to assist the producers of the area in marketing their silver-cobalt ores.

The Inspection Branch administers the operating rules of the Mining Act which call for the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Branch and all hoisting ropes in use at mines are periodically tested by a Branch-operated cable-testing laboratory.

Since 1951 the Department has been engaged in a road-building program to give access to mineralized areas and open them for full development. In 1955 this became an inter-departmental project with other interested departments participating through an inter-departmental committee of Ministers which decides on priorities and locations. Actual construction is carried out by the Department of Highways. Under the federal-provincial Roads to Resources Program inaugurated in Ontario in 1959, the provincial government shared equally in the cost of constructing roads to otherwise inaccessible areas (see also the Transportation Chapter, Part III, Section 2). The agreement expired on Mar. 31, 1967.

The Public Relations Branch of the Department carries out a regular publicity and information program and maintains a library of films on mining subjects which are available for free loan to the public. Each year, displays pertaining to mining are prepared and presented at the Canadian National Exhibition and elsewhere in the province.

Manitoba.—The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences. Manitoba also aids the mining industry by assisting in the construction of access roads to mining districts.

To encourage the exploration for minerals in Manitoba, the Mineral Exploration Assistance Act was passed in April 1966. This Act provides for the payment of grants to individuals to assist in defraying the cost of exploration within designated areas. If assisted exploration results in the discovery of a deposit, the grant is repayable from the profits of the mine; a grant for exploration that proves unsuccessful is not repayable.

Saskatchewan.—Assistance to the mining industry in Saskatchewan is administered by the Department of Mineral Resources. The *Mineral Lands Branch* of the Department is responsible for administering the Precambrian Assistance Program. This Program, designed to stimulate development and utilization of the mineralized areas of northern Saskatchewan, offers to industry a 50-p.c. rebate of approved exploration expenditures on a specified area or property to a maximum of \$50,000 a year for each individual or company and a maximum of \$150,000 on any one area or property. This Branch is also responsible for making disposition of all Crown minerals and maintains records respecting areas let out by lease, permit or claim. Recording offices, located at Regina, La Ronge, Uranium City and Creighton, assist the public in determining the lands available and accept applications.

Officers of the *Mines Inspection Branch*, under the authority of the Mines Regulation Act, make regular examinations of all mines to ensure proper conditions for the health and safety of the men employed. Safety education, particularly in the form of first aid and mine rescue instruction, is also a part of the work of this Branch. All Branch officers are stationed at the Regina headquarters.

The Precambrian Geology Division of the *Geological Sciences Branch* conducts geological surveys in the shield areas of the province and publishes maps and reports for the information and guidance of the industry. Resident geologists are maintained at Uranium City and La Ronge and at the latter centre a laboratory provides for the storage and examination of core and samples. The Division processes exploration data and assessment work to be made available for inspection by the industry.

Alberta.—Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and pays the cost of training mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the up-grading and cleaning of coal, and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture. (See also p. 412).

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special reductions provided for in the Alberta Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia.—The Department of Mines and Petroleum Resources of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by depart-

mental engineers and geologists; grub-stakes, limited to a maximum of \$800, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

Section 3.—Mining Legislation

Federal Mining Laws and Regulations.—As of Jan. 1, 1968, the mineral rights vested in the Crown in right of Canada are those situated in the Yukon Territory and the Northwest Territories, those in the islands of Hudson Bay and under Hudson Bay and Hudson Strait, and those under Canada's continental shelves. The Supreme Court of Canada in a recent decision made it clear that, as between Canada and the Province of British Columbia, the Crown in right of Canada owns and has legislative jurisdiction over "lands, including mines and minerals and other natural resources, of the sea bed and subsoil seaward from the ordinary low-water mark on the coast of the mainland and the several islands of British Columbia, outside the harbours, bays, estuaries and other similar inland waters to the outer limits of the territorial sea of Canada, as defined in the Territorial Sea and Fishing Zones Act. . .". The Court also decided that the Federal Government owns and has legislative jurisdiction "in respect of the mineral and other natural resources of the sea bed and subsoil beyond that part of the territorial sea of Canada . . . to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the minerals and other natural resources of the said area".

In addition, the mineral rights of some small and usually isolated areas scattered throughout the provinces are vested in the Crown in the right of Canada. The Department of Energy, Mines and Resources is responsible for the disposition of mineral rights and for the administration and enforcement of regulations relating to minerals in Canada's offshore areas, other than those under Arctic coastal waters, in Hudson Bay, the islands in Hudson Bay, Hudson Strait and the small parcels above mentioned. The Department of Indian Affairs and Northern Development is similarly responsible in the Yukon Territory, the Northwest Territories and the offshore rights under Arctic coastal waters; this Department also acts as adviser to Indian bands in Indian reserves and is responsible for the administration and enforcement of the relevant regulations.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in the right of Canada and are administered by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. The minerals on an Indian reserve may be developed under the Indian Oil and Gas Regulations or the Indian Mining Regulations for the benefit of the band of Indians having rights to the reserve, only after the band has given approval by referendum. Indian band councils are encouraged to take a share of responsibility in the management of their mineral resources.

Mining exploration is carried out in the Yukon Territory in accordance with the provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in the Northwest Territories, including Arctic coastal waters, operations are governed by the Canada Mining Regulations 1961 as amended. There are also the Territorial Dredging Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations common to both territories. In the Yukon Territory, mining rights may be acquired by staking claims under the appropriate Acts or Regulations. A one-year lease may be obtained to prospect for the purposes of placer mining, renewable for two additional periods of one year each; a 21-year lease, renewable for a like period, may be obtained under the Yukon Quartz Mining Act.

Under the Canada Mining Regulations, a prospector's licence is required. Staked claims must be converted to lease or relinquished within ten years. In certain areas, a system of exploration by permit over large areas is allowed. Any individual over 18 years of age or any joint-stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease will be granted to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be

the beneficial owner of any interest acquired under such lease; no lease will be granted to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation. Any new mine beginning production after the Canada Mining Regulations came into force in 1961 will not be required to pay royalties for a period of 36 months, starting from the day the mine comes into production. Production date is established as the date determined under the provisions of the Income Tax Act.

An exploration assistance fund for petroleum and other minerals in the Yukon and Northwest Territories was established by the Federal Government in 1966. Initially limited to \$3,000,000 per year, the fund may provide 40 p.c. of the cost of approved exploration programs. Assistance is available only to Canadian citizens or companies incorporated in Canada. Named the Northern Mineral Exploration Program, it is designed to encourage investment from additional Canadian sources previously not attracted to investment in northern exploration operations.

Oil and Gas Legislation.—The Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations, issued pursuant to the Territorial Lands Act and the Public Lands Grants Act, regulate the disposition of oil and gas rights and regulate exploration and development in the Yukon Territory, the Northwest Territories and the offshore areas of the continental shelves, but not under lands within any provinces. Only subsurface rights and those beneath the sea bed are granted. When required, surface rights are negotiated separately. An exploratory permit may be granted and such permit issued on or after Jan. 1, 1968, depending on the area covered thereby, is valid for a term of three, four or six years; a permit is renewable for one-year periods up to six times by the Chief of the Resources Management Division, Resource and Economic Group, Department of Indian Affairs and Northern Development, and further renewals may be granted by the Minister. Leases, which are renewable if oil or gas is still able to be produced, must conform to prescribed land patterns but must not exceed 50 p.c. of the area of an exploratory permit area.

An oil and gas exploratory permit may be issued to any individual over 21 years of age or to any joint-stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. No oil and gas lease granted to a permittee will be issued to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease, or to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are beneficially owned by persons who are Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange, and that Canadians will have an opportunity of participating in the financing and ownership of the corporation.

*Provincial Mining Laws and Regulations.**—In general, all Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves, National Parks and other lands which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments. The exception is Quebec where all mineral lands except those granted to individuals in the townships prior to 1880 are administered by the province; also mining rights on federal lands in Quebec are administered by the province.

The granting of land in any province except Ontario and Nova Scotia no longer carries with it mining rights upon or under such land. In Ontario, mineral rights are expressly reserved if they are not to be included. In Nova Scotia, no mineral rights belong to the owner of the land except those pertaining to gypsum and building materials, and

* Compiled from material supplied by the provincial governments.

the Governor in Council may declare deposits of either limestone or building materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be obtained separately by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

Placer.—In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General Minerals.—These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia, the most elaborate laws and regulations apply in this division. In all provinces except Alberta and Saskatchewan, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a specified size may then be staked. In Manitoba and British Columbia a licence is required only for staking and in British Columbia any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years except in Quebec where a development licence may be renewed on a yearly basis; also in Saskatchewan there is no work commitment in the first year of the claim. There is no time limit in British Columbia but \$500 assessment work, of which a survey may represent two fifths, must be performed and recorded before a lease may be obtained. In Quebec, a specified number of man-hours of work must be performed and the excess may be carried forward for renewal of licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

Fuels.—In provinces where coal occurs, the size of holdings is laid down together with the conditions of work and rental under which they may be held. In Quebec, the search for and development of petroleum and natural gas may be carried out under a prospecting or search permit followed by a working lease; the search permit covers a period of five years and an acreage of not over 60,000 acres, whereas the lease extends over a 20-year period and an acreage not over half the acreage of the permit. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba and Alberta, exploration costs are applicable in part on the first year's lease rental and, in British Columbia and Saskatchewan, credit is given for up to 24 months' rental, having regard to the amount of excess credit established. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying.—Regulations under this heading define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum quarries belong to the owner of the property. Under the New Brunswick Quarriable Substances Act, 1968, quarriable substances (ordinary stone, building and construction stone, sand, gravel, peat and peat moss) are vested in the owner of the land in or on which they lie; the Minister with the approval of the Lieutenant-Governor in Council may designate a shore area lying outside Crown land to be subject to the Act; and no person shall take or remove or cause to be taken or removed more than one half cubic yard of a quarriable substance from Crown land or a designated shore area without obtaining a permit or lease. On Quebec public lands and on those granted to individuals after Jan. 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals prior to 1966 remain in the possession of the owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

Section 4.—World Production of Certain Metallic Minerals and Fuels

Table 34 shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1966. These figures are taken from the *United Nations Statistical Yearbook 1967* which presents production figures for a much more extensive list of mining and quarrying industries.

34.—World Production of Certain Metallic Minerals and Fuels, 1966

NOTE.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nations Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Crude Petroleum	Copper	Nickel	Iron Ore	Zinc	Natural Gas	Asbestos	Gold
	'000 metric tons	'000 metric tons	metric tons	'000 metric tons	'000 metric tons	'000,000 cu. metres	'000 metric tons	kilo-grammes
Albania.....	920	2.6	—	—	—	—	—	—
Algeria.....	33,267	1.2	—	906	13.1	2,046	—	—
Angola.....	704	—	—	494	—	—	—	—
Argentina.....	14,975	—	—	74	26.6	4,531	0.2	—
Australia.....	431	111.0	—	7,367	375.3	4	12.2	28,481
Austria.....	2,757	1.9	—	1,099	10.5	1,874	—	—
Bahrain.....	3,144	—	—	—	—	—	—	—
Barbados.....	—	—	—	—	—	—	—	—
Belgium.....	—	—	—	37	—	3	—	—
Bolivia.....	417	5.7 ¹	—	—	16.7 ¹	59	—	—
Brazil.....	5,548	3.6	1,135	15,813	—	114	—	1,628
Britain.....	78	—	—	3,747	—	789	272.9	5,224
Brunei.....	4,693	—	—	—	—	180	—	—
Bulgaria.....	404	30.0	—	815	77.6	201	1.8	—
Burma.....	568	0.2	70	—	6.0	—	—	—
Cameroon.....	—	—	—	—	—	—	—	—
Canada.....	43,470	461.1	212,337	22,594	949.8	43,829	1,353.4	101,830
Central African Republic.....	—	—	—	—	—	—	—	1
Chile.....	1,620	681.7	—	7,788	1.3	1,584	—	2,460

¹ Exports.

34.—World Production of Certain Metallic Minerals and Fuels, 1966—continued

Country	Crude Petroleum	Copper	Nickel	Iron Ore	Zinc	Natural Gas	Asbestos	Gold
	'000 metric tons	'000 metric tons	metric tons	'000 metric tons	'000 metric tons	'000,000 cu. metres	'000 metric tons	kilo- grammes
China—								
Mainland.....	—	90.0	—	—	100.0	—	—	—
Taiwan.....	32	2.0	—	—	—	439	0.7	1,300
Colombia.....	9,938	—	—	330	—	1,019	—	8,735
Congo—								
Brazzaville.....	62	—	—	—	7.7	—	—	130
Democratic Republic of	—	316.9	—	—	113.4	—	—	4,971
Cuba.....	30	—	27,400	—	—	—	—	—
Cyprus.....	—	24.7 ¹	—	—	—	—	25.5	—
Czechoslovakia.....	190	—	—	633	—	—	—	—
Denmark.....	—	—	—	13	—	—	—	—
Ecuador.....	342	—	—	—	—	—	—	338
Ethiopia.....	—	—	—	—	—	—	—	746
Fiji Islands.....	—	—	—	—	—	—	—	3,501
Finland.....	—	28.7	3,843	409	62.5	—	12.1	481
France.....	2,932	—	—	17,250	23.5	5,161	—	—
French Guiana.....	—	—	—	—	—	—	—	20
Gabon.....	1,447	—	—	—	—	11	—	1,072
Germany—								
Eastern.....	—	19.0	—	430	12.0	116	—	—
Federal Republic of.....	7,868	1.2	—	2,301	106.6	3,896	—	3,170
Ghana.....	—	—	—	—	—	—	—	21,287
Greece.....	—	—	—	53	—	—	—	—
Guatemala.....	—	—	—	—	0.5	—	—	—
Guinea.....	—	—	—	300	—	—	—	—
Guyana.....	—	—	—	—	—	—	—	87
Haiti.....	—	2.7	—	—	—	—	—	—
Honduras.....	—	—	—	—	10.8 ¹	—	—	120 ¹
Hong Kong.....	—	—	—	77	—	—	—	—
Hungary.....	1,706	0.4	—	182	3.4	1,553	—	—
India.....	4,647	10.3	—	16,377	5.2	—	6.9	3,744
Indonesia.....	22,455	—	4,000	—	—	1,601	—	155
West Irian.....	60	—	—	—	—	—	—	—
Iran.....	105,445	—	—	30	17.0	1,388	—	—
Iraq.....	68,010	—	—	—	—	—	—	—
Ireland.....	—	1.3	—	—	22.1	—	—	—
Israel.....	188	10.3	—	—	—	95	—	—
Italy.....	1,812	1.2	—	406	115.1	8,825	82.1	—
Japan.....	778	111.7	—	1,370	253.6	2,049	19.4	17,277
Kenya.....	—	0.8	—	—	—	—	0.1	370
Korea—								
North.....	—	12.0	—	—	105.0	—	—	—
Republic of.....	—	0.8	—	395	11.7	—	0.3	1,883
Kuwait.....	114,354	—	—	—	—	—	—	—
Liberia.....	—	—	—	11,255	—	—	—	135
Libya.....	72,645	—	—	—	—	—	—	—
Luxembourg.....	—	—	—	1,868	—	—	—	—
Madagascar.....	—	—	—	—	—	—	—	26
Malaysia—								
East (Sarawak).....	48	—	—	—	—	—	—	81
West.....	—	—	—	3,279	—	—	—	85
Mauritania.....	—	—	—	4,652 ¹	—	—	—	—
Mexico.....	17,317	74.4	—	1,498	219.2	14,985	—	6,641
Morocco.....	103	1.9	372	602	46.4	13	—	—
Mozambique.....	—	—	—	—	—	—	—	1
Netherlands.....	2,366	—	—	—	—	3,573	—	—
Neutral Zone (jointly shared by Saudi Arabia and Kuwait).....	22,441	—	—	—	—	—	—	—
New Caledonia.....	—	—	87,000	121	—	—	—	—
New Guinea (Australia)...	—	—	—	—	—	—	—	873
New Zealand.....	1	—	—	1	—	—	—	279
Nicaragua.....	—	9.8	—	—	—	—	—	4,668 ¹
Nigeria.....	21,000	—	—	—	—	176	—	2
Norway.....	—	14.5	—	1,528	13.2	—	—	—
Pakistan.....	508	—	—	2	—	—	—	—
Papua.....	—	—	—	—	—	—	—	1
Peru.....	3,075	—	—	4,672	—	—	—	3,435
Philippines.....	—	73.8	—	895	1.6	—	0.5	14,125
Poland.....	400	16.0	1,300	831	189.8	1,376	—	—

¹ Exports.

34.—World Production of Certain Metallic Minerals and Fuels, 1966—concluded

Country	Crude Petroleum	Copper	Nickel	Iron Ore	Zinc	Natural Gas	Asbestos	Gold
	'000 metric tons	'000 metric tons	metric tons	'000 metric tons	'000 metric tons	'000,000 cu. metres	'000 metric tons	kilo- grammes
Portugal.....	—	3.7	—	93	1.4	—	—	572
Qatar.....	13,845	—	—	—	—	—	—	—
Romania.....	12,825	—	—	804	—	13,616	—	—
Saudi Arabia.....	119,456	—	—	—	—	—	—	—
Sierra Leone.....	—	—	—	1,331	—	—	—	—
South Africa.....	—	119.8	5,400	4,366	—	—	250.9	960,467
South West Africa.....	—	37.3	—	—	28.2	—	—	—
Southern Rhodesia.....	—	17.2	700	—	—	—	160.0	17,100
Spain.....	27	8.4	—	2,550	56.2	—	—	693
Sudan.....	—	—	—	20	—	—	—	6
Surinam.....	—	—	—	—	—	—	—	161
Swaziland.....	—	—	—	—	—	—	32.8	10
Sweden.....	27	15.2	—	16,924	83.4	—	—	2,425
Switzerland.....	—	—	—	26	—	—	—	—
Tanzania, United Republic of.....	—	—	—	—	—	—	—	1,725
Thailand.....	—	—	—	418	—	—	—	—
Trinidad and Tobago.....	7,727	—	—	—	—	1,379	—	—
Trucial Oman.....	17,507	—	—	—	—	—	—	—
Tunisia.....	639	—	—	620	2.8	8	—	—
Turkey.....	2,041	28.9	—	925	8.7	—	4.2	—
Union of Soviet Socialist Republics.....	265,125	800.0	90,000	92,974	420.0	142,962	840.0	—
United Arab Republic.....	6,264	—	—	220	—	—	1.9	—
United States.....	409,170	1,296.5	14,553	52,209	519.5	487,239	114.2	56,036
Upper Volta.....	—	—	—	—	—	—	—	500
Venezuela.....	176,418	—	—	11,418	—	6,856	—	525
Yugoslavia.....	2,222	62.2	—	900	85.2	402	7.6	3,101
Zambia.....	—	623.4	—	—	63.6	—	—	—

CHAPTER XV.—ELECTRIC POWER*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Electric Power Development

Subsection 1.—Historical and Current Trends in Power Development

Electric power development in Canada has undergone remarkable and sustained growth since the beginning of the century. From a modest 133,000 kilowatts of generating capacity installed at the end of 1900, Canada's installed hydro capacity rose to 23,405,000 kw. by the end of 1967 and thermal capacity to almost 9,600,000 kw.

The facing chart shows the expansion in installed generating capacity in hydro and thermal stations that has taken place since 1920. Thermal-electric power development in Canada was not well documented early in the century but it is apparent that its growth was slow and of relatively minor importance until the late 1940s. The rate of development of hydro facilities, on the other hand, tended to accelerate after the turn of the century when improvements in electric power transmission techniques were introduced and increasing emphasis began to be placed on the construction of large hydro-electric stations.

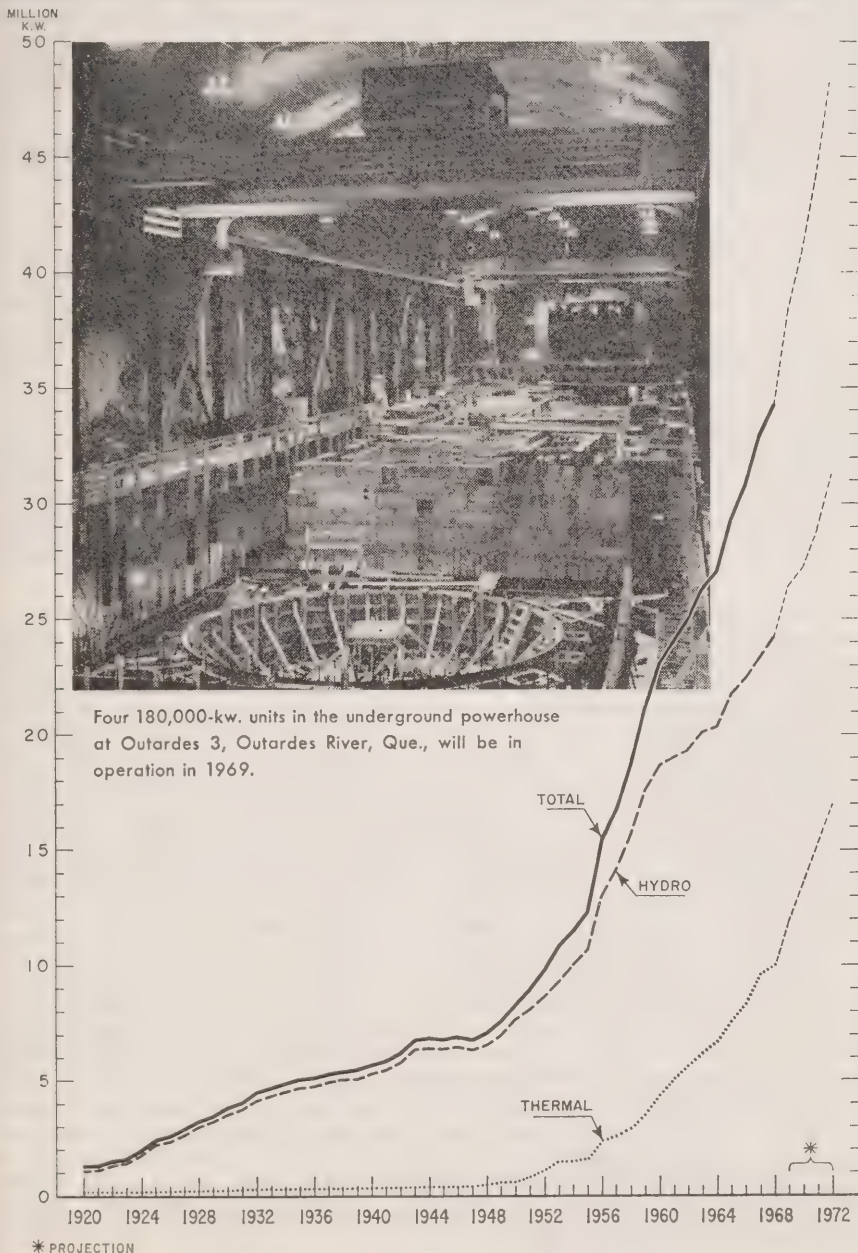
During the prosperous 1920s, demand for electricity became heavier and the rate of installation increased appreciably. Then, under the depressed conditions of the early 1930s, power demand dropped off but did not show up immediately as a drop in the installation rate because of the time lag inherent in hydro-electric power development. The completion of hydro projects initiated prior to the depression period accounted for the continuation of a high rate of capacity installation up until 1935; thereafter, poor economic conditions in the 1935-39 period resulted in a reduced rate.

In the early war years, the tremendous demand for power to drive Canada's war industries accounted for the sharp rise in installation of new generating facilities between 1940 and 1943, but in the later war years construction dropped off so that, from 1944 to 1947, a second flattening occurred in the growth curve. After the War, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities. To stay abreast of these demands required

* Sections 1 and 2 of this Chapter were prepared by the Water Resources Branch, Department of Energy, Mines and Resources, Ottawa; Sections 3 and 4 were revised by the Energy Statistics Section, Industry Division, Dominion Bureau of Statistics, and Section 5 by the various provincial Commissions concerned.

A special article on "Fuels in Canada", which discusses the sources and utilization of energy in Canada, appears in the preceding chapter at pp. 637-645.

GROWTH IN ELECTRIC POWER GENERATING CAPACITY IN CANADA, 1920-72



the installation of new capacity at a rate higher than at any time in Canada's history. These demands also led to the start of an extensive program of thermal plant construction in the early 1950s, since they could not be satisfied from hydro sources alone. In the period 1950-67, the average annual rate of installation of both hydro and thermal facilities was about 1,400,000 kw., with hydro contributing two kilowatts of new capacity for each kilowatt contributed by thermal. However, it is interesting to note that the average increase in thermal generating capacity over the five years 1963-67 has equalled the average increase in hydro capacity.

Table 1 shows the status of installed generating capacity in hydro and thermal stations and the combined total for all stations in Canada as at Jan. 1, 1968.

**1.—Installed Hydro- and Thermal-Electric Generating Capacity,
by Province, as at Jan. 1, 1968**

Province or Territory	Hydro	Thermal	Total
	kw.	kw.	kw.
Newfoundland.....	696,000	107,000	803,000
Prince Edward Island.....	—	57,000	57,000
Nova Scotia.....	152,000	544,000	696,000
New Brunswick.....	262,000	532,000	794,000
Quebec.....	11,009,000	612,000	11,621,000
Ontario.....	6,339,000	3,952,000	10,291,000
Manitoba.....	1,074,000	366,000	1,440,000
Saskatchewan.....	397,000	682,000	1,079,000
Alberta.....	616,000	1,433,000	2,049,000
British Columbia.....	2,797,000	1,269,000	4,066,000
Yukon Territory.....	28,000	5,000	33,000
Northwest Territories.....	35,000	29,000	64,000
Canada.....	23,405,000	9,588,000	32,993,000

Current Trends.—Although water power traditionally has been and still is the main source of electric energy in Canada, thermal sources some day will undoubtedly become the main supplier. The choice between development of a hydro-electric power site and construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic in nature. In the case of a hydro-electric project, the heavy capital costs involved in construction are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and the dependability and flexibility of operation in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to the demand area, with a consequent saving in transmission costs. With the current trend to large steam stations, however, a certain amount of the flexibility of location of thermal stations is lost because such units require considerable quantities of water for cooling purposes, making it essential that they be sited close to an adequate water supply.

The marked trend to thermal development which became apparent in the 1950s can be explained in part by the fact that, by that time in many parts of Canada, most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other sources of electric energy. More recently, however, advances in extra-high-voltage transmission techniques are providing a renewed impetus to the development of hydro power sites previously considered too remote.

Because of the relatively long starting-up time required by large thermal units, thermal stations tend to lack flexibility of operation and can be used most efficiently to meet continuous load conditions. Hydro stations, on the other hand, can put generating units on line with minimum delay and hence are admirably suited to supply power to meet the peak loads which may occur several times each day. By combining the advantages of both hydro and thermal stations in integrated supply systems, power producers are now achieving much greater flexibility of operation.

Another trend in development designed to meet the problem of varying daily loads is the use of pumped storage. An example is the Sir Adam Beck hydro development at Niagara Falls where water taken from the Niagara River above the Falls is carried by tunnel and power canal to penstocks which supply the main generating station on the bank of the Niagara River some distance below the Falls. In off-peak hours, power from the main station is used to pump water from the power canal into a reservoir maintained at a higher level; during peak-load hours, the pumps, which are dual-purpose units, operate as generators and are driven by water released from the reservoir. The pumping-generating units at this development make available an extra 176,700 kw. of generating capacity. A pumping-generating station using the same general principle has been constructed on the Brazeau River in Alberta as part of the 305,500-kw. Big Bend hydro development.

Perhaps the most promising application of the pumping-generating principle is its use in conjunction with nuclear power stations. Nuclear units, in common with the larger conventional thermal units, can be used most efficiently under conditions of continuous operation. Off-peak nuclear power can be used to operate pump-turbine units and the hydro-electric power derived from operating the units as generators is available for use during periods of peak demand.

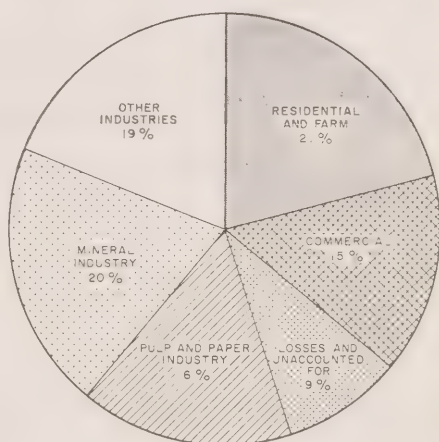
Subsection 2.—Utilization of Power

In 1967, Canada's generating facilities produced a total of 165,625,000,000 kilowatt-hours of electric energy, after allowing for the energy used in the power stations themselves. Of this total, 132,747,000,000 kwh. was produced in hydro-electric stations and 32,878,000,000 kwh. in thermal stations. Energy imported from the United States exceeded by 187,000,000 kwh. the energy exported to the United States during the year, bringing to 165,812,000,000 kwh. the total energy made available. The diagram illustrates how this energy was used.

Industry uses approximately 55 p.c. of the total electric energy made available in Canada; residential and farm use accounts for 21 p.c. and commercial use 15 p.c. The remaining 9 p.c. is listed under "losses and unaccounted for". Because many power producers do not distinguish in their records between residential and farm customers, the amount of energy used is shown as a combined total. Energy used for street lighting represents less than 1 p.c. of the total energy made available and is included in the "commercial" category.

About 20 p.c. of the total energy made available in Canada is used in the mineral industry, including smelting and refining, 16 p.c. by the pulp and paper industry and 19 p.c. by other industries. Of the latter, the chemical industry and the primary iron and steel industry together consume almost one half. Approximately 75 p.c. of the energy consumed by the mineral industry is used in the smelting and refining of metals.

The incidence of large water power resources in those regions in which the more important mineral deposits have been found has greatly facilitated mining development. Recent examples are the nickel mining and refining complex at Thompson, Man., which uses hydro-electric power generated in the Kelsey plant on the Nelson River, and the iron



ore mining operations in Labrador, supplied by the Twin Falls plant on the Unknown River. Metal mining, a very important division of the Canadian mining industry, is carried on mainly in two physiographic regions, the Western Cordillera and the Canadian Shield. In the Western Cordillera, the mountainous topography and the relatively high amounts of precipitation favour the development of water power. In the Canadian Shield, which is a Precambrian formation stretching in a wide sweep around Hudson Bay from the Mackenzie River basin to the eastern tip of Labrador, heavy glaciation in recent geological times has formed river systems which are comparatively young and are characterized by large numbers of lakes connected by short river sections with numerous rapids and falls suitable for the development of hydro-electric power.

Canada has no known deposits of bauxite but the availability of low-cost hydro-electric power has fostered the establishment of a large aluminum industry which produces one eighth of the world's supply of this metal, most of which is exported from Canada. Further evidence of the value of water power to mining operations is provided by the fact that Canada's asbestos industry, which produces about 40 p.c. of the world's supply of asbestos fibre, obtains the major part of its power supply from hydro-electric sources.

Canada's pulp and paper industry is one of the world's great industrial enterprises. Total mill capacity for the production of newsprint paper is considerably greater than that of any other country in the world, and in total production of wood pulp Canada is second only to the United States. The fact that about 90 p.c. of the manufactured newsprint is exported gives some indication of the importance of the industry to the Canadian economy. By far the larger portion of the energy used in the pulp and paper industry is derived from water power.

Subsection 3.—Water Power Resources, Undeveloped and Developed

Table 2 presents a summary of developed water power in Canada and an estimate of undeveloped water power potential, based on records maintained by the Inland Waters Branch of the Department of Energy, Mines and Resources. Estimates of available power are shown for undeveloped sites only; for developed sites, the total generating capacity actually installed is indicated. It should be noted that the capacity installed at an existing hydro-electric development is frequently in excess of the continuous power available at the site. The relationship between installation and available power is explained on p. 665.

2.—Water Power Resources, by Province, as at Jan. 1, 1968

Province or Territory	Undeveloped Water Power			Developed Water Power
	Available Continuous Power at 88 p.c. Efficiency			Installed Generating Capacity
	at Q95 ¹	at Q50 ²	at Qm ³	
	kw.	kw.	kw.	kw.
Newfoundland.....	1,195,000	3,450,000	4,641,000	696,000
Prince Edward Island.....	—	1,000	2,000	—
Nova Scotia.....	21,000	112,000	165,000	152,000
New Brunswick.....	62,000	221,000	497,000	262,000
Quebec.....	8,027,000	27,780,000	36,314,000	11,009,000
Ontario.....	462,000	1,088,000	1,635,000	6,339,000
Manitoba.....	2,964,000	5,501,000	5,853,000	1,074,000
Saskatchewan.....	773,000	1,298,000	1,559,000	397,000
Alberta.....	895,000	3,244,000	4,866,000	616,000
British Columbia.....	4,946,000	16,635,000	24,665,000	2,797,000
Yukon Territory.....	664,000	3,237,000	5,689,000	28,000
Northwest Territories.....	864,000	2,232,000	3,322,000	35,000
Canada.....	20,873,000	64,799,000	89,208,000	23,405,000

¹ Power equivalent of flow available 95 p.c. of the time.
the time.

² Power equivalent of flow available 50 p.c. of the time.

³ Power equivalent of arithmetical mean flow.

Undeveloped Water Power Resources.—Table 2 gives estimates of undeveloped power based on different rates of flow: the first column indicates continuous power ordinarily available during periods of low discharge under existing conditions of river flow based on Q95, which is the natural or modified flow available 95 p.c. of the time; the second column shows dependable maximum power based on Q50, which is the natural or modified flow available for at least 50 p.c. of the time; and the third column shows dependable maximum power based on Qm, the arithmetical mean flow. On rivers for which flow records are sparse or non-existent, estimates of flow are made from available information relating to run-off in the same general area. The hydraulic head used in calculating undeveloped water power is based on the actual drop or the feasible concentration of head which has been measured or carefully estimated. Preliminary figures for Quebec supplied by the provincial Department of Natural Resources, however, reflect the net river power potential which would result from development of the entire head available on Quebec rivers whose drainage areas exceed 3,000 sq. miles.

It should be emphasized that the figures of continuous power at Q95 represent only the minimum water power possibilities in Canada because estimates are based upon existing river flow and, for the most part, do not reflect the benefits of streamflow regulation that would result from the development of storage potential. Partial regulation is required in most instances to obtain the continuous power available at Q50. On the other hand, the arithmetical mean flow figures represent the power that would be obtainable if the entire flow in the river could be regulated to provide a continuous flow of constant magnitude. It can readily be seen that, because the latter condition assumes complete regulation, estimates of potential based upon arithmetical mean flow will, if other pertinent factors are neglected, exceed the amount of capacity that might be expected to be installed at the site, particularly where little or no storage is available. However, recent experience in the development of water power sites has indicated that, in fact, the generating capacities installed at many sites are very considerably in excess of what might be dictated by even the arithmetical mean flow. Several major river-diversion possibilities exist, particularly in British Columbia. For this reason, the estimates of potential of British Columbia's undeveloped hydro resources have recently been boosted substantially, mainly because of the inclusion of figures based upon the diversion of rivers which, if they are developed at all, will almost certainly be developed on a combined-river basis.

Developed Water Power Resources.—The figures of installed generating capacity given in Table 2 are based on the manufacturer's rating in kilowatts as shown on the generator name-plate, or derived from the rating where it is indicated in kilovolt-amperes. The maximum economic installation at a power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is usual practice, however, to install units having a combined capacity in excess of the available continuous power at Q50, and frequently in excess of the power available at Qm. There are a number of reasons for this. The excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built subsequent to initial development to smooth out fluctuations in river flows. In other cases, deficiencies in power output during periods of low flow have been offset by auxiliary power supplied from thermal plants, or by interconnection with other plants which operate under different load conditions or are located on rivers with different flow characteristics.

Thus, the extent to which the installed capacity exceeds the available continuous power at the various rates of flow is dependent upon the factors that govern the system of plant operation, and varies widely in different areas of the country. In some developments, the difference may amount to several hundred per cent. For this reason, discretion should be used in comparing the figures in the last column with those in the preceding columns, as available continuous power and installed capacity are not directly

comparable. As a rough guide, however, it may be assumed that the power equivalent of the flow at Q50 represents an approximate, if conservative, estimate of hydro generating capacity remaining to be installed in Canada.

Provincial and Territorial Distribution.—The provincial and territorial distribution of undeveloped water power resources and installed generating capacity, given in Table 2, reveals that substantial amounts of water power have been developed in all provinces except Prince Edward Island, where water power resources are meagre. As natural resource development proceeds, the fortunate incidence of water power in proximity to mineral, forest and other resources becomes increasingly apparent. There is little doubt that the existence of large amounts of potential hydro power on northern rivers will prove to be a factor of prime importance in the eventual realization of the natural wealth of Canada's north.

The water power resources of *Newfoundland*, determined on the basis of the limited available streamflow data, are estimated to be of very considerable magnitude. On the Island, although the length of the rivers is generally not great, topography and run-off are favourable for hydro-electric power development. Of the substantial capacity installed, a very large portion serves the pulp and paper industry. In Labrador, the Churchill River and its tributaries, now under development, constitute one of the largest potential sources of water power in Canada.

In *Prince Edward Island* there are no large streams and water power plants are limited in size to those used to operate small mills. The water power resources of *Nova Scotia* and *New Brunswick*, although small in comparison with those of other provinces, are a valuable source of energy and make a substantial contribution to the economies of the two provinces. Numerous rivers in both provinces provide moderate-sized power sites either within economic transmission distance of the principal cities and towns or advantageously situated for use in development of the timber and mineral resources. These provinces are also favoured with abundant indigenous coal supplies.

Quebec is the richest of all the provinces in water power resources, possessing more than 40 p.c. of the total recorded for Canada. Quebec also leads in developed water power, its present installation of 11,009,000 kw. representing about 47 p.c. of the national total. The largest single hydro-electric installation in Canada is the Quebec Hydro-Electric Commission's 1,574,260-kw. Beauharnois development on the St. Lawrence River; also notable are the Commission's 1,015,200-kw. Manic 2 development on the Manicouagan River, its Bersimis I development on the Bersimis River having an installed capacity of 912,000 kw., and the Aluminum Company of Canada Limited's 742,500-kw. Chute des Passes plant on the Peribonca River. The Manic 2 development is part of a major power project which represents a significant advance in the development of Quebec's hydro-electric resources. This project, involving the harnessing of the headwaters of the Manicouagan and Outardes Rivers, will permit the eventual installation of some 5,500,000 kw. on the two rivers; a total installation of 1,550,000 kw. was in service at the end of 1967. Power production in the province is facilitated by the regulation of streamflow by the provincial Department of Natural Resources through the storage dams which it owns and operates. Some of the responsibility for regulation rests with the Quebec Hydro-Electric Commission.

Almost all of the sizable water power potential in *Ontario* within easy reach of demand centres has been developed and planners are looking to the more remote sites as new sources of supply. Improvements in long-distance transmission techniques have brought many of these sites within the economic orbit of demand centres. Several sites are being developed and a number of others are under investigation. Most of the hydro-electric power produced in the province comes from the generators of The Hydro-Electric Power Commission of Ontario, Canada's largest power producing and distributing organization. Ontario's largest hydro-electric generating station is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2 and the

associated pumping-generating station have a combined generating capacity of 1,804,200 kw. In addition to the power generated in its own plants, the Commission purchases large amounts of electric power generated outside the province.

Of the three Prairie Provinces, *Manitoba*, with immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan Rivers, is the most generously endowed with water power resources. Until recently, hydro-electric generating stations on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing amounts of power south from hydro-electric stations on northern rivers to help meet the province's constantly growing power demands. Large water power resources exist in the central and northern parts of *Saskatchewan*, principally on the Churchill, Fond du Lac, and Saskatchewan Rivers. Power from Squaw Rapids on the Saskatchewan River is fed into the transmission network of the provincially owned Saskatchewan Power Corporation, which serves the more settled areas of the province. Before the completion of this development in 1963, these areas had been served by electric power from thermal plants fuelled by coal, oil or natural gas, the hydro-electric power generated in the province being used almost exclusively for mining purposes in northern areas. In *Alberta*, most of the principal hydro-electric developments are located on the Bow River and its tributaries and, from these developments, Calgary Power Ltd. serves most of the southern part of the province. The Big Bend hydro-electric development on the Brazeau River in the headwaters of the North Saskatchewan River was completed in 1967, augmenting the energy from the Bow River plants. Substantial water power resources are located in the northern regions and, although these are somewhat remote from present centres of population, the advent of extra-high-voltage transmission has enhanced the prospect of their development.

British Columbia has many mountain streams that offer abundant opportunity for the development of hydro-electric power. In terms of recorded available water power resources, developed and undeveloped, the province ranks second in Canada and is exceeded only by Quebec and Ontario in the amount of generating capacity installed. Notable for the magnitude of their power potential are such rivers as the Columbia, the Fraser, the Peace and the Stikine. Until recently, however, hydro-electric developments on smaller rivers in the southern areas have satisfied the major load requirements of the province but in 1968 the immense power resources of the Peace River began to supplement the energy supply. Development of the hydro potential of the Canadian portion of the Columbia River is being planned, utilizing the water stored behind three huge storage reservoirs, two of which have been completed. The foremost producer and distributor of electric power in British Columbia is the provincially owned British Columbia Hydro and Power Authority.

Power from present developments in the *Yukon Territory* and the *Northwest Territories* is used almost exclusively to satisfy the needs of local mines and adjacent settlements. Owing to the lack of developed native fuel sources and to transportation difficulties, water power is of special importance in the development of mining areas, such as Mayo in the Yukon Territory and Yellowknife in the Northwest Territories. The Northern Canada Power Commission, a federal Crown corporation, is responsible for the construction and management of public utility plants. In Yukon Territory, most of the resources are located on the Yukon River and its tributaries. The possibility exists of diverting the headwaters of the Yukon River through the Coast Mountains to utilize a high head near tidewater in northern British Columbia but such a development would affect adversely the potential of sites on the main river. Resources in the Northwest Territories have not been surveyed to the same extent as those in Yukon Territory but they are nevertheless known to be of considerable magnitude, particularly on rivers flowing into Great Slave Lake. Of major significance, as well, is the hydro-electric potential of the South Nahanni River, which drains to the Mackenzie River via the Liard River. On the basis of preliminary investigations, it is estimated that, with total regulation and complete use of the head susceptible of develop-

ment, the hydro-electric potential of the South Nahanni River would be close to 1,000,000 kw. Indications are that the rivers draining the district of Keewatin, north of Manitoba, could also contribute materially to the total power potential of the Northwest Territories.

Subsection 4.—Thermal Power Generation

The incidence of immense water power resources in Canada and the brisk pace of their development has tended to overshadow the very considerable contribution being made by thermal energy in the nation's power economy. At the end of 1967, the total installed thermal capacity in Canada was 9,588,000 kw., about 29 p.c. of the total electric generating capacity in the country. The fact that energy produced in thermal plants during the year accounted for only 20 p.c. of the total may be attributed in part to the fact that a considerable amount of the capacity installed is maintained for stand-by purposes. Emphasis on thermal plant construction is likely to become more marked as development of the nation's water power reserves becomes more complete.

Conventional Thermal Power.—Approximately 90 p.c. of all of the conventional thermal power generating equipment in Canada is driven by steam turbines. The magnitude of the loads being carried by steam plants has led to the installation of steam units with capacities as high as 542,000 kw. The remainder of the load is carried by gas turbine and internal combustion equipment. The flexibility of internal combustion engines makes this type of equipment particularly suitable for meeting power loads in smaller centres, especially in the more isolated areas.

Table 1 (p. 662) shows that the Provinces of Prince Edward Island, Nova Scotia, Saskatchewan and Alberta depend on thermal capacity for most of their power requirements and that New Brunswick has slightly more thermal than hydro. For Ontario, where hydro capacity was nearly twice the thermal as recently as 1965, forecasts based on present construction schedules indicate that by the early 1970s total installed thermal capacity will have overtaken hydro.

With the exception of several large plants in St. John's and Grand Falls, most of the thermal-electric capacity in Newfoundland is made up of relatively small units used to supply power to small, often isolated communities. With the wealth of water power readily available in the province, it is not likely that Newfoundland will have need for large thermal stations for some time to come. In Prince Edward Island, almost all the generating capacity is oil-fuelled; in Nova Scotia, most of the energy generated in thermal-electric utility plants is derived from coal and the remainder from petroleum fuels; and in New Brunswick petroleum fuels provide slightly more than half of the thermal-electric energy.

The abundance of Quebec's water power wealth, much of it within economic transmission distance of existing demand areas, has so far limited the application of thermal power to specific local use. However, the growing emphasis on thermal power in other parts of Canada is also beginning to be apparent in Quebec, where thermal capacity will serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost exclusively hydro-electric base more flexible through integrated operation. Installed capacity at Quebec's largest thermal plant, the Tracy Station near Sorel, was raised to 600,000 kw. in 1968. Quebec's first nuclear station, on the south shore of the St. Lawrence River between Gentilly and Bécancour, is scheduled for service in 1971 with 250,000 kw. of electric generating capacity.

Ontario has more thermal capacity than any other province in Canada; capacity installed at the end of 1967 totalled 3,952,000 kw., which was about 41 p.c. of the national total. The 4,928,300 kw. of conventional thermal capacity and 2,168,000 kw. of nuclear thermal capacity scheduled for service in the period 1968-74 will increase considerably this province's share of the national total. Canada's largest thermal station is Ontario Hydro's Lakeview generating station at Toronto, which has a capacity of 1,500,000 kw.

made up of five 300,000-kw. units, the largest in operation in Canada. This station was expanded to 2,400,000 kw. in 1968. Four units of 500,000-kw. capacity are planned for the Lambton station near Sarnia, installation of which will be completed in 1970.

Manitoba supplements its predominantly hydro-based power supply with a substantial amount of thermal capacity but current emphasis is on development of water power resources. Saskatchewan, until recently, has relied on thermal capacity to satisfy the needs of the more settled areas and hydro-electric power generated in the province has been used almost exclusively for mining purposes in the northern areas. In the past few years, however, development of storage on the South Saskatchewan River has made hydro-electric power available in the southern part of the province and plans for expanding the province's thermal capacity are limited for the present to a 300,000-kw. extension to the 132,000-kw. Boundary Dam thermal station. The incidence of vast fuel resources accounts for the emphasis on thermal power generation in Alberta; the province's largest thermal plants are the 405,000-kw. gas turbine and steam station at Edmonton and the 582,000-kw. Wabamun steam station.

About two thirds of British Columbia's thermal generating capacity is installed in three plants located in the Vancouver area. The capacity of the largest of these plants, the 600,000-kw. Burrard generating station, was to be increased to 750,000 kw. by 1968.

Until recently, most of the power requirements of the Northwest Territories were satisfied from thermal sources but the commissioning of the Twin Gorges hydro station on the Taltson River in 1965 altered the balance in favour of hydro. In Yukon Territory, hydro is the larger contributor. Most of the thermal-electric energy in the Territories is generated by small diesel units.

Nuclear Thermal Power.—Commercial electric power generated from the heat of nuclear reaction became a reality in Canada in 1962 when the 20,000-kw. Nuclear Power Demonstration station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario. The NPD station is the forerunner in a series of large nuclear stations that will shoulder more and more of Canada's rapidly growing power loads.

Research into reactor design and the application of nuclear energy in the electric power field are among the more important responsibilities of Atomic Energy of Canada Limited, a Crown company incorporated in 1952 (see also pp. 397-404). AECL has concentrated its efforts on the development of the CANDU reactor, which uses natural uranium as a fuel and heavy water as the moderator. By using heavy water as the moderator, a high energy yield can be obtained from natural uranium and, since natural uranium is a low-cost nuclear fuel, the cost of fuel is a minor component in the cost of producing power. Natural uranium has the added attraction of being available in commercial quantities in Canada.

The Canadian nuclear power reactor also offers the simplest of nuclear fuel cycles. Sufficient energy can be extracted from the fuel so that the economics of the system do not require a value to be placed on the spent fuel. There is, therefore, no need to carry out costly chemical processing of the spent fuel unless the worth of the remaining contained fissile material becomes sufficiently high to make chemical processing an economic proposition. The spent fuel is an ideal package for simple underwater storage and no large volume of highly radioactive liquids from a chemical processing plant has to be handled and contained.

The NPD station has been used extensively to demonstrate the ability of the system to operate at a high capacity factor and to determine the nature and predictability of outages. Fuel changes while the system is in operation have become routine and a considerable amount of research into the sources of heavy water losses has been carried out. As a result of this research, losses have been cut down and the NPD station is demonstrating that a very acceptable heavy water loss rate is attainable.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nuclear power station went into commercial production in 1967. The station, built with the co-operation of Ontario Hydro, houses a 200,000-kw. CANDU reactor. Experience gained in the design and operation of this reactor has encouraged the development of even larger units and construction of the four-unit, 2,160,000-kw. Pickering nuclear station is under way near Toronto, with in-service dates for the units scheduled for 1971 to 1974.

A further step in the development of the CANDU reactor is the use of boiling light water instead of pressurized heavy water as the coolant. This change offers further reductions in unit energy costs. Quebec's Gentilly nuclear station being constructed on the south shore of the St. Lawrence River near Trois-Rivières will utilize boiling light water in its CANDU reactor. This station is scheduled for service in 1971 with 250,000 kw. of nuclear-electric capacity.

Subsection 5.—Electric Power Transmission

The nature of the loads handled by the small, widely scattered generating systems in the early days of the electric power industry in Canada did not warrant the expense of interconnecting power systems. However, as the demand for dependable electric power increased and improved techniques reduced power transmission costs, the benefits of integrating power systems to achieve reliability of service and flexibility of operation were re-appraised.

The number of amalgamations of small systems into larger operating groups has increased steadily and today most of Canada's generating stations are components of large, integrated and often interconnected power systems operated by power utilities and companies in the various provinces.

Constant research in the field of power transmission has developed techniques that enable power producers to develop hydro-electric sites previously considered beyond economic transmission distances. Most noticeable, perhaps, is the progressive stepping up of transmission line voltages. In Canada, there are a number of transmission lines designed for operation at 500,000 volts. A 574-mile, 500,000-volt line is being constructed to carry power from the Peace River to the lower mainland of British Columbia. In Ontario, a 435-mile, 500,000-volt line was completed in 1966 from hydro-electric plants in the James Bay watershed to Toronto. In 1965, power was carried for the first time at 735,000 volts when the 375-mile transmission line between Quebec's Manicouagan-Outardes hydro complex and the cities of Quebec and Montreal went into operation.

Although at present power is transmitted exclusively as alternating current (ac), Canadian producers are considering the advantages of carrying power at high voltages over long-distance direct current (dc) lines. One such transmission line with a rating of $\pm 260,000$ volts augments an ac line between Vancouver Island and the mainland. Another, in Manitoba, will carry power from the Nelson River area near Hudson Bay 600 miles south to Winnipeg at $\pm 450,000$ volts.

The search for economies in transmission systems has led to changes not only in materials used but also in tower erection and cable-stringing methods. Guyed aluminum V-shaped and Y-shaped transmission towers are being used increasingly in place of self-supporting towers where the terrain is suitable, and erection costs are being reduced by the use of helicopters to transport tower sections to the site and for tower assembly. The use of helicopters for spraying in brush control on the right-of-way and for line inspection and maintenance is becoming more widespread.

At present, domestic interconnections of from 66,000 volts to 500,000 volts exist between systems in Alberta and British Columbia; Saskatchewan, Manitoba and north-western Ontario; the interconnected northeastern and southern Ontario systems and Quebec; and between New Brunswick and Nova Scotia. Important international interconnections exist between British Columbia and the State of Washington; Ontario and the State of Michigan; Ontario and the State of New York; Quebec and the State of New York; and New Brunswick and the State of Maine.

Section 2.—Progress in Construction of Generating Facilities, 1967-68

During 1967, Canada's electric power generating capacity increased by 2,140,190 kw.; thermal capacity, which includes nuclear electric, accounted for 1,224,340 kw. and the remaining 915,850 kw. was installed in hydro plants. In terms of the amount of generating capacity installed in one year in Canada, 1967 shares second place with 1965; the year of greater installation was 1959 when 2,500,000 kw. was placed in service. The new capacity placed in service in 1967 raised Canada's total generating capacity to 33,000,000 kw., consisting of 23,400,000 kw. hydro and 9,600,000 kw. thermal.

Current estimates indicate that 2,800,000 kw. of new generating capacity went into service during 1968, 1,284,000 kw. thermal and 1,516,000 kw. hydro. Including the capacity scheduled for 1968, Canada's power producers had under construction or had scheduled for construction during the next few years a total of 24,800,000 kw. of new capacity, 15,200,000 kw. hydro and 9,600,000 kw. thermal.

Newfoundland.—Newfoundland's electric generating capacity increased by 208,625 kw. during 1967 following installation of 229,500 kw. of hydro capacity and removal from service of thermal capacity totalling 20,875 kw. Hydro capacity totalling 76,500 kw. was scheduled for service in 1968 and another 5,500,000 kw. over the years following.

Construction of the Newfoundland and Labrador Power Commission's Bay d'Espoir hydro development continued during 1967 with 229,500 kw. of hydro capacity coming into service. A similar amount is involved in the second stage of development then under way. A 25,000-kw. gas turbine unit, installed in 1966 to meet power requirements at the Bowater Power Company's plant in Corner Brook pending power becoming available from the Bay d'Espoir hydro development, was removed from service in 1967. Plans of the Churchill Falls Power Corporation Limited for the 5,250,000-kw. Churchill River hydro station in Labrador call for power from the first units to become available in 1972 and installation of other units as demand for power increases; when completed, the station will rank as one of the world's largest hydro developments. A subsidiary, the Twin Falls Power Corporation, is helping to meet interim power needs in the area by adding a 46,800-kw. unit at its station on the Unknown River, a tributary of the Churchill River.

Nova Scotia.—In Nova Scotia, electric generating capacity totalling 27,750 kw. was commissioned in 1967, with 11,200 kw. expected to come into service in 1968 and another 230,000 kw. proposed for installation later.

The capacity of the Nova Scotia Power Commission's Weymouth Falls hydro plant on the Sissiboo River was doubled in 1967 by the addition of a 9,000-kw. unit, and Scott Maritime Pulp Limited began operation of its single-unit 18,750-kw. thermal plant at Abercrombie Point. Construction of the Nova Scotia Light and Power Company's 11,200-kw. hydro-electric station on the Allain River near Lequille was scheduled for completion in 1968. Under construction for service in 1969 at the Commission's Trenton and Point Tupper thermal plants were units of 150,000 kw. and 80,000 kw., respectively.

New Brunswick.—New Brunswick's total electric generating capacity was increased by 97,900 kw. in 1967, 300,700 kw. remained under construction for service in 1968 and another 400,000 kw. for completion later.

A 100,000-kw. unit at the New Brunswick Electric Power Commission's Courtenay Bay thermal plant was brought into service in 1967, raising the plant's capacity to 263,000 kw. At the Commission's Mactaquac hydro-electric development on the Saint John River, six 100,000-kw. units were being installed, the first three to be in service in 1968 and the other three by 1976. The Commission has commenced construction of a new thermal plant at Dalhousie; ultimate capacity is expected to be 500,000 kw. with the first of five units to be in service by late 1969. A 400-kw. unit for the Commission's Milltown hydro development on the St. Croix River was installed in 1967.

Quebec.—In 1967, Quebec's extensive program of power-plant construction added 430,480 kw. of new capacity to the province's already considerable total of almost 12,000,000 kw. Hydro-electric capacity accounted for 261,030 kw. of this total and thermal capacity for 169,450 kw. A total of 181,000 kw. of new capacity was scheduled for 1968, 150,000 kw. of it thermal capacity and 31,000 kw. hydro capacity. On the basis of present scheduling, nearly 5,000,000 kw. of new capacity, most of it hydro, should come into service in Quebec during the years 1969-74.

One of North America's most spectacular engineering projects, the harnessing of the power potential of the Manicouagan and Outardes Rivers, went ahead on schedule during 1967. The project involves the construction of seven hydro plants on the two rivers and the installation of additional capacity at an existing station. The total amount of new generating capacity to be made available by the Manicouagan-Outardes project will be in excess of 5,500,000 kw. At Manic 2, located eleven miles from the mouth of the Manicouagan River, the final unit was brought into service in 1967, raising the total installed capacity to 1,015,200 kw. in eight units. The 184,410-kw. Manic 1 station also was completed in 1967 when the third unit came into service. The largest development in the Manicouagan-Outardes hydro complex is Manic 5, designed for a total generating capacity of 1,344,000 kw. in eight units. The buttressed, multi-arch dam at Manic 5, which was completed in 1967, is over 4,000 feet long and 703 feet high at the highest point above bed-rock, and ranks as one of the highest and most massive dams of its kind in the world. First power is expected in 1970 and completion of the plant in 1972. Last of the Manicouagan plants to come into service in the current program will be Manic 3, with a total generating capacity of 1,120,000 kw. in seven units; initial service is scheduled for 1972 and completion of the plant for 1974.

On the Outardes River, power at Outardes 4 will be generated by four 158,000-kw. units, the first three to be in service in 1968 and the fourth in 1970. The dam at Outardes 4 will create a reservoir with a surface area of more than 250 sq. miles. The underground powerhouse planned for Outardes 3 will house four 180,000-kw. units, three of which were scheduled for initial operation in 1968 and the fourth in 1969. The Outardes 2 plant, adjacent to the Outardes Falls plant, is scheduled for service in 1970 with a total capacity of 453,000 kw. in three units.

Elsewhere in the province, Quebec Hydro is developing two sites on the Quinze Rapids reach of the Upper Ottawa River to supply power to the rapidly developing northwestern region. The Rapides des Îles plant is designed for four 36,630-kw. units; one unit was installed in 1966 and two in 1967 and development of the fourth is dependent upon the magnitude of local power demands. The First Falls plant is designed for 124,200 kw. in four units. One unit was to be installed in 1968 and two in 1969; the fourth unit is unscheduled.

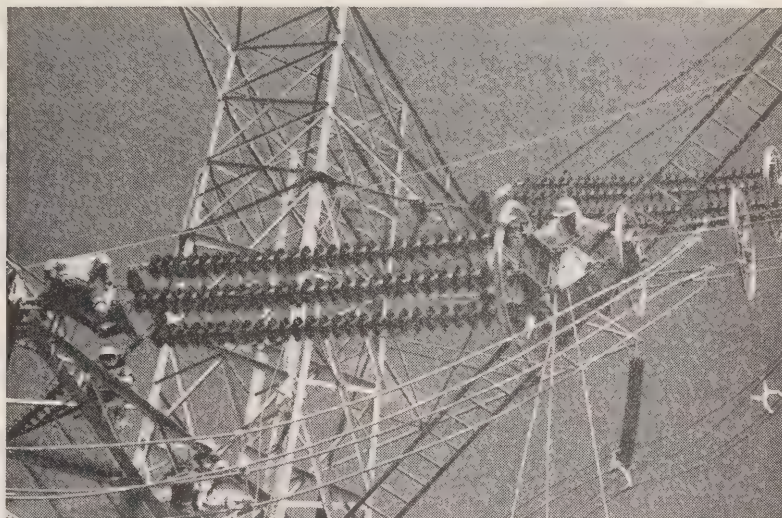
The capacity of Quebec's first large thermal plant, Tracy plant near Sorel, was increased in 1967 by the addition of one 150,000-kw. unit, bringing the station capacity to 450,000 kw.; the fourth and final unit was scheduled for 1968.

Construction of Quebec's first nuclear generating station, rated at 250,000 kw., began in 1966. The Gentilly nuclear station, being built by Atomic Energy of Canada in co-operation with Quebec Hydro, is located at Pointe aux Roches on the south shore of the St. Lawrence River and is scheduled for completion in 1971.

Ontario.—In 1967, Ontario's electric generating capacity was increased by 504,330 kw.; 928,300 kw. was to be brought into operation in 1968 and another 6,841,500 kw. is planned or under construction for service in later years. Most of the new capacity is thermal-electric.

During 1967, the power development program of Ontario Hydro involved construction on six hydro-electric stations, seven conventional thermal stations and two nuclear-electric plants. The Mountain Chute hydro station on the Madawaska River, comprising two units, each rated at 69,700 kw., came into service late in 1967. Additional generating capac-

Ontario Hydro's highly
trained linemen use so-
phisticated techniques
to service 500,000-
kw. lines without turn-
ing off the power.



ity was being installed at Barrett Chute and Stewartville stations on the Madawaska River downstream from Mountain Chute; by 1969, two additional 55,800-kw. units at Barrett Chute will bring that station's capacity to 151,400 kw., and two 45,900-kw. units will increase the Stewartville station's capacity to 153,000 kw. Construction of the Aubrey Falls hydro station on the Mississagi River started in 1966 where two 80,000-kw. units were scheduled for completion in 1969.

Design work is under way for two additional hydro-electric projects initiated in 1967—Wells generating station on the Mississagi River, and Lower Notch generating station on the Montreal River. The Wells station, which will accommodate two 107,500-kw. units, is scheduled for service in 1970. Lower Notch, with a generating capacity of 244,000 kw. in three units, is scheduled for service in 1971.

At Lakeview generating station on the shore of Lake Ontario near Toronto, installation of the final three 300,000-kw. steam units continued in 1967 and 1968. The ultimate capacity of Lakeview, realized in late 1968, is 2,400,000 kw. in eight units. The Lambton station, on the St. Clair River about 14 miles south of Sarnia, will house four 500,000-kw. units to come into service at the rate of two a year in 1969 and 1970. Ontario Hydro installed a number of combustion turbine generators in southern Ontario to serve as standby units and contribute to the provision of an adequate margin of reserve capacity at times of peak load, particularly during the present period of rapid load growth. Site investigations for the Nanticoke coal-fired thermal-electric station are being carried out on the north shore of Lake Erie, the schedule for the new station calling for four 500,000-kw. units to be installed between 1971 and 1974.

In the nuclear-electric field, installation of the 200,000-kw. CANDU unit at Douglas Point was completed in 1967 and work continued on the Pickering nuclear-electric station. At Pickering, four 540,000-kw. units are scheduled for operation one in each year from 1970 to 1973.

Manitoba.—Manitoba's electric generating capacity increased by 23,300 kw. of thermal capacity in 1967. Scheduled for installation in 1968 was 109,250 kw. of hydro-electric capacity. A total of 1,252,950 kw. of hydro capacity and 105,000 kw. of thermal capacity was scheduled for installation after 1968.

Most of the new capacity will be installed on the Nelson River as a result of an agreement signed by the Governments of Manitoba and Canada. The agreement calls for construction of a hydro plant at Kettle Rapids, diversion of flow from the Churchill River into the Nelson River near Thompson, regulatory facilities at the outlet of Lake Winnipeg and transmission facilities from the Kettle Rapids site to Winnipeg. Capacity of the Kettle Rapids plant will be slightly more than 1,200,000 kw., of which 406,000 kw. is expected to be in service by 1971. To accommodate the anticipated demand for power before completion of the Kettle Rapids project, the capacity of Manitoba Hydro's Selkirk thermal plant was expanded to 155,800 kw. in 1967 when two 11,900-kw. units were installed, and Brandon thermal station is being increased by 105,000 kw. to a total of 237,000 kw. The Grand Rapids hydro-electric station on the Saskatchewan River was completed in 1968 when the fourth and final unit of 109,250 kw. was installed. Construction continued on the installation of a sixth 33,750-kw. unit at the Kelsey Generating Station.

Saskatchewan.—In Saskatchewan, electric power generating capacity increased by 35,520 kw. in 1967. Scheduled for 1968 and later were 168,000 kw. of hydro capacity and 300,000 kw. of thermal capacity.

Two 11,840-kw. gas turbine units designed for peaking service at Saskatchewan Power Corporation's Success thermal plant near Swift Current were placed in service in 1967 and a third in 1968. Two 150,000-kw. steam turbines will be added at the Boundary Dam thermal plant at Estevan for service in 1969 and 1970. At the South Saskatchewan River Project near Outlook, three 55,980-kw. generators went into service in 1968; the Prairie Rehabilitation Administration completed construction of the dam and reservoir in 1967, primarily for irrigation purposes, and Saskatchewan Power Corporation is installing the hydro-electric generating facilities. A 100,000-kw. extension is planned for the Queen Elizabeth Power Station near Saskatoon for completion in 1971, by which time the Corporation's generating capacity will be about 1,525,000 kw.—more than double that of 1961.



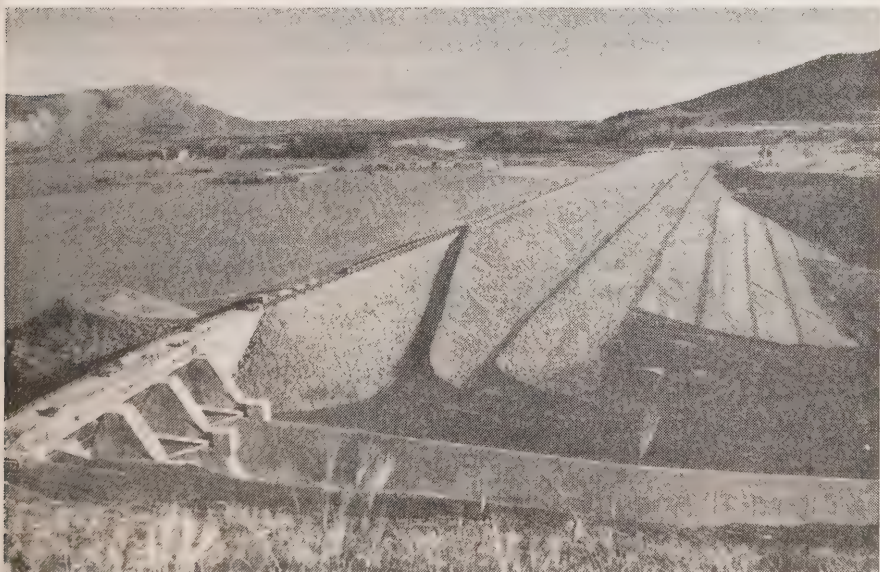
The Kettle Rapids generating station, now under construction, is the second largest of seven major developable sites on the Nelson River. It will ultimately yield 1,200,000 kw. of power which will travel 500 miles by extra-high-voltage line into the heart of Manitoba's southern network.

Alberta.—Alberta's total installed electric generating capacity increased by 504,905 kw. in 1967; hydro-electric plants accounted for 171,220 kw. and thermal plants for 333,685 kw. No new capacity was added in 1968 but 780,000 kw. was scheduled for subsequent years.

A 161,500-kw. hydro-electric unit, at present the largest in Canada, went into service in 1967 at the Big Bend hydro development of Calgary Power Ltd., raising the capacity of the station to 305,500 kw. At the pumping station associated with the Big Bend plant, a pumping-generating unit with a generator rating of 11,250 kw. was installed in 1967, increasing the total generating capacity to 20,970 kw. in two units. The Company's Wabamun thermal plant was extended and a new 300,000-kw. coal-burning unit installed, boosting the plant capacity to 595,000 kw. Construction of Calgary Power's new 300,000-kw. Sundance thermal plant on the south side of Lake Wabamun continued during 1967 and Great Canadian Oil Sands Limited installed a second 30,500-kw. unit at its Fort McMurray plant. Canadian Utilities Limited is installing a 150,000-kw. coal-fired unit for service in 1969 at the Battle River thermal plant near Forestburg. The City of Edmonton plans to build a new plant consisting of two 165,000-kw. gas-fired units in the early 1970s.

British Columbia.—British Columbia's electric generating capacity increased by 303,225 kw. in 1967, and a further 861,700 kw. was scheduled for service in 1968. New installations scheduled for operation after 1968 will yield more than 1,500,000 kw.

In 1967, Cominco Ltd. completed the installation of the fourth and final unit at their Brilliant hydro-electric plant on the Kootenay River; the new unit, rated at 27,200 kw., increases the station capacity to 108,800 kw. Installation of the fourth 150,000-kw. unit at the British Columbia Hydro and Power Authority's Burrard thermal plant was completed in 1967, raising the total generating capacity of the station to 600,000 kw. MacMillan, Bloedel and Powell River Limited installed a 36,000-kw. steam turbo-generator at the



The W.A.C. Bennett Dam at the Portage Mountain development on the Peace River, B.C. In September 1968, the turning of a switch started power flowing southward from three generators. As the water level in the reservoir rises, five more will be installed with two additional units when required.

Powell River plant raising the plant's total capacity to 50,925 kw., and the capacity of Alcan's Kemano hydro-electric plant was boosted to 812,800 kw. with the addition of an eighth unit rated at 105,600 kw.

Substantial progress has been made in construction on the British Columbia Hydro and Power Authority's Portage Mountain development on the Peace River. The development is planned for ten units with a total capacity of 2,270,000 kw., three of which were in service by the autumn of 1968. Work progressed on the three storage dams being built by the Power Authority under the terms of the Columbia River Treaty, which entitles Canada to one half of the power benefits accruing in the United States from the regulation of 15,500,000 acre-feet of water to be stored in Canada behind the Duncan, Arrow and Mica Dams, and one half of the value of the estimated flood damage prevented in the United States through the operation of the dams for flood control. The Duncan Dam was completed in 1967, ahead of the April 1968 schedule, and Arrow Dam was completed in 1968, also ahead of schedule: Mica Dam, largest of the three, is required to be in operation by April 1973. The Authority is planning the development of the hydro potential of the Canadian portion of the Columbia River.

Yukon and Northwest Territories.—In 1967, a net total of 1,970 kw. of new thermal capacity was added at various locations in the Yukon Territory and 2,185 kw. in the Northwest Territories. Some 2,200 kw. of new thermal capacity began operation in 1968 and another 8,000 kw. of hydro capacity and up to 18,100 kw. of thermal capacity are proposed for installation over subsequent years.

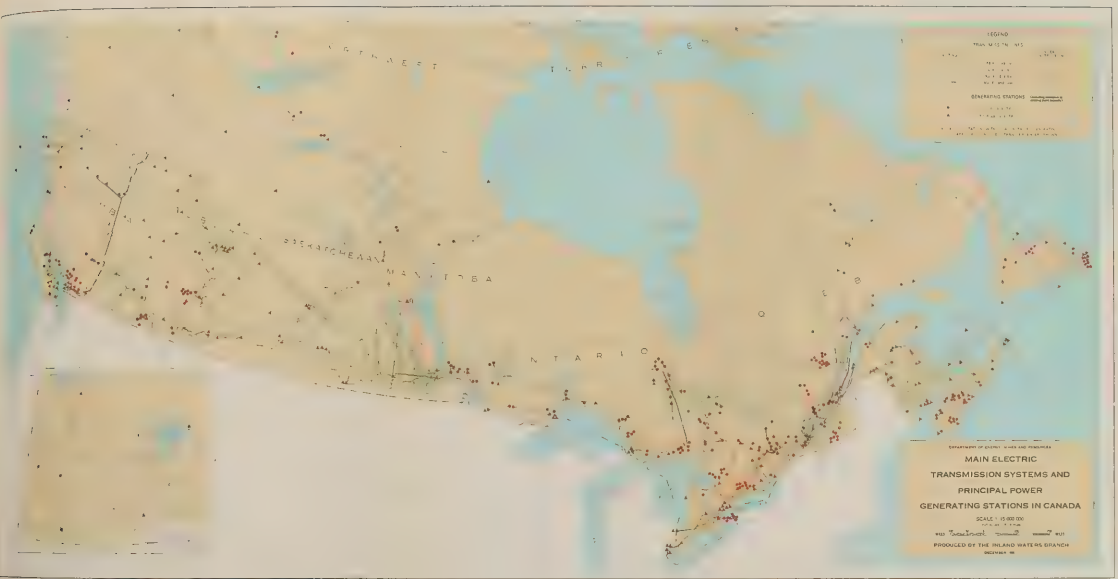
Section 3.—Power Generating Capability and Load Requirements

Power generating *capability*, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the *capacity* of such generating facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the time of peak load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate since 1957. The annual rate of increase was 6.7 p.c. in the ten-year period 1957-67 and 5.8 p.c. in the four-year period 1963-67. In comparison, the forecast rate of growth for the years 1967-72 is 9.0 p.c.; thermal generating capability is expected to grow at an average rate of 13.5 p.c. a year in the forecast period compared with 14.5 p.c. in the period 1957-67, and hydro-electric capability is expected to increase at 6.9 p.c. a year compared with 4.7 p.c. in the 1957-67 period. This rate of growth in hydro generating capability in the forecast period is attributable to the large power projects under construction in relatively remote areas which will be completed within the next few years.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric generating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability followed by Alberta and British Columbia. The first full-scale nuclear power station went into commercial operation in Ontario early in 1967.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario at 6,283,000 kw., followed by Quebec at 3,275,000 kw.; Newfoundland at 2,056,000 kw. and British Columbia at 1,973,000 kw. Ontario will meet most of its increased generating capability by adding 5,312,000 kw. in thermal capability and 971,000 kw.



LEGEND

- TRANSMISSION SYSTEMS
- 110,000 V.
 - 220,000 V.
 - 500,000 V.
- GENERATING STATIONS
- Hydroelectric
 - Thermal
 - Nuclear
- Scale: 1:500,000

DEPARTMENT OF ENERGY, MINES AND PETROLEUM

**MAIN ELECTRIC
TRANSMISSION SYSTEMS AND
PRINCIPAL POWER
GENERATING STATIONS IN CANADA**

SCALE: 1:500,000

PRODUCED BY THE INLAND WATERS BRANCH

DECEMBER 1988

in hydro capability, the former including 1,533,000 kw. nuclear. Quebec will add 3,090,000 kw. hydro and 180,000 thermal and Newfoundland 1,652,000 kw. hydro and 404,000 kw. thermal.

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 6.7 p.c. a year from 1957 to 1967 and 7.7 p.c. a year from 1963 to 1967; peak load demand is forecast to increase at the average rate of 7.0 p.c. a year in the period 1967-72. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net generating capability in the 1957-67 period increased each year from 1957 to 1960 and 1962, 1965 and 1967. The forecast is for increases from 1967 to 1972 with the exception of 1970. The reserve ratio as a percentage of firm power peak load reached a high of 28.2 p.c. in 1960 and fell to 11.4 p.c. in 1966 but is expected to increase to 22.4 p.c. in 1972.

3.—Net Generating Capability, by Province, 1967

(Thousand kilowatts)

Province or Territory	Type of Generating Facility				Total
	Hydro-Electric	Thermal-Electric			
		Steam	Internal Combustion	Gas Turbine	
Newfoundland.....	690	47	13	15	765
Prince Edward Island.....	—	51	7	—	58
Nova Scotia.....	151	540	3	—	694
New Brunswick.....	253	533	7	—	793
Quebec.....	10,374	528	19	36	10,957
Ontario.....	5,772	3,447	8	288	9,515
Manitoba.....	1,061	291	12	9	1,373
Saskatchewan.....	392	531	33	55	1,011
Alberta.....	680	1,156	24	155	2,015
British Columbia.....	2,968	840	124	189	4,121
Yukon Territory.....	17	—	4	—	21
Northwest Territories.....	35	1	10	1	47
Canada.....	22,393	7,965	264	748	31,370

Section 4.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

4.—Capacity and Firm Power Peak Load Requirements, Actual 1951 and 1960-67 and Forecast 1968-72
(Thousand kilowatts)

Item	Actual										Forecast				
	1951	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	
Net Generating Capability—															
Hydro-electric.....	9,044	18,516	18,389	18,651	19,241	19,493	20,779	21,459	22,393	24,212	26,412	27,195	28,818	31,250	
Steam—Conventional.....			3,773	4,506	5,194	5,422	6,354	6,634	7,798	8,714	10,605	12,295	13,127	13,974	
Nuclear.....	1,032	3,824	—	—	—	—	—	—	167	180	200	200	950	1,700	
Internal combustion.....			240	251	236	255	243	257	264	276	283	283	284	288	
Gas turbine.....			351	371	382	384	460	583	748	868	868	874	919	938	
Totals, Net Generating Capability.....	19,076	22,340	22,753	23,869	25,053	25,554	27,836	28,933	31,370	34,250	38,368	40,847	44,098	48,150	
Receipts of firm power from United States.....	—	—	2	4	2	2	—	100	180	—	—	—	—	—	
Deliveries of firm power to United States.....	175	166	146	121	122	127	89	87	95	106	113	118	108	87	
Totals, Net Capability.....	9,901	22,174	22,609	23,752	24,933	25,429	27,747	28,946	31,455	34,144	38,255	40,729	43,990	48,063	
Peak Loads—															
Firm power peak loads within Canada.....	8,989	17,264	18,353	18,972	20,755	22,503	24,199	25,973	27,948	30,092	32,398	34,595	36,917	39,237	
Indicated shortages.....	321	—	—	—	28	13	—	—	—	—	—	—	—	—	
Totals, Indicated Peak Loads within Canada.....	9,310	17,264	18,353	18,972	20,783	22,516	24,199	25,973	27,948	30,092	32,398	34,595	36,917	39,237	
Indicated Reserve.....	591	4,910	4,256	4,780	4,150	2,913	3,548	2,973	3,507	4,052	5,857	6,134	7,073	8,826	

The current series of electric power statistics dates back to 1956. Earlier reports, entitled *Central Electric Stations*, were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

5.—Electric Energy Generated, by Type of Station, 1958-67, and by Province 1966 and 1967

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1958.....	90,509,200	6,975,089	97,484,289	1963.....	103,831,866	18,406,328	122,238,194
1959.....	97,039,830	7,588,653	104,628,483	1964.....	113,343,948	21,642,799	134,986,747
1960.....	105,882,773	8,495,160	114,377,933	1965.....	117,063,328	27,210,502	144,273,830
1961.....	103,919,241	9,794,077	113,713,318	1966.....	129,834,430	28,300,802	158,135,232
1962.....	104,050,724	13,418,024	117,468,748	1967.....	132,747,303	32,877,520	165,624,823
1966				1967			
Nfld.....	2,603,718	320,412	2,924,130	Nfld.....	2,894,856	310,852	3,205,708
P.E.I.....	291	155,626	155,917	P.E.I.....	—	181,611	181,611
N.S.....	443,186	2,429,172	2,872,358	N.S.....	669,499	2,290,102	2,959,601
N.B.....	1,188,427	2,031,916	3,220,343	N.B.....	1,312,303	2,322,438	3,634,741
Que.....	62,200,343	541,282	62,741,625	Que.....	62,403,019	1,481,019	63,884,038
Ont.....	36,998,857	11,584,150	48,583,007	Ont.....	37,939,300	14,167,259	52,106,559
Man.....	6,036,882	133,396	6,170,278	Man.....	6,474,555	90,239	6,564,794
Sask.....	1,686,280	2,255,994	3,942,274	Sask.....	1,736,694	2,625,936	4,362,630
Alta.....	1,425,028	4,723,660	6,148,688	Alta.....	1,435,865	5,363,163	6,799,028
B.C.....	16,981,084	4,074,615	21,055,699	B.C.....	17,604,271	3,990,255	21,594,526
Y.T. and				Y.T.....	105,436	11,608	117,044
N.W.T.....	270,334	50,579	320,913	N.W.T.....	171,505	43,038	214,543
Canada, 1966..	129,834,430	28,300,802	158,135,232	Canada, 1967..	132,747,303	32,877,520	165,624,823

Of the total generation in 1967 of 165,624,823,000 kwh., 80.1 p.c. was produced from water power and 19.9 p.c. was generated thermally; the proportions differed markedly among provinces as shown in the following statement.

Province	Hydro	Thermal	Province or Territory	Hydro	Thermal
	p.c.	p.c.		p.c.	p.c.
Newfoundland.....	90.3	9.7	Manitoba.....	98.6	1.4
Prince Edward Island....	—	100.0	Saskatchewan.....	39.8	60.2
Nova Scotia.....	22.6	77.4	Alberta.....	21.1	78.9
New Brunswick.....	36.1	63.9	British Columbia.....	81.5	18.5
Quebec.....	97.7	2.3	Yukon Territory.....	90.1	9.9
Ontario.....	72.8	27.2	Northwest Territories....	79.9	20.1

Table 6 gives summary figures of power production and distribution classified by province, and Tables 7 and 8 give figures classified by type of production establishment. Total installed capacity in Canada amounted to 32,965,367 kw. in 1967, an increase of 2,200,343 kw. over 1966. Of the 1967 total, 27,720,754 kw. were accounted for by utilities and the remainder by industrial establishments. During 1966 and 1967, total sales to ultimate customers amounted to 99,773,839,000 kwh. and 107,762,063,000 kwh., respectively, of which 99.8 p.c., in both years was sold by utilities.

Sales to power customers excluding sales to industrial establishments with generating facilities made up 52.1 p.c. of the total in 1966 and 50.5 p.c. in 1967, sales to domestic and farm customers were 32.2 p.c. and 32.5 p.c., respectively, and commercial sales 14.6 p.c. and 15.9 p.c., respectively. Exports to the United States in 1967 amounted to 3,993,888,000 kwh. compared with 4,397,333,000 kwh. in 1966.

6.—Summary Electric Power Statistics, by Province, 1966 and 1967

Year and Province or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers ¹	Total Revenue from Ultimate Customers ²	Electrical Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	\$'000	No.	\$'000
1966							
Newfoundland.....	588,952	2,843,549	—	92,563	19,358	960	4,359
Prince Edward Island..	57,391	155,917	—	28,484	4,269	197	897
Nova Scotia.....	667,504	2,683,463	—	225,839	39,519	1,754	8,666
New Brunswick.....	694,596	3,168,491	311,195	174,438	34,764	1,400	7,619
Quebec.....	11,188,766	56,592,430	25,872	1,688,373	296,301	12,172	90,146
Ontario.....	9,784,513	53,825,017	3,246,707 ³	2,266,320	421,064	16,831	112,542
Manitoba.....	1,412,771	6,475,488	—	310,730	54,227	2,750	16,338
Saskatchewan.....	1,006,607	3,634,383	—	300,039	57,184	1,608	10,216
Alberta.....	1,500,035	6,155,082	—	428,151	80,314	1,933	12,710
British Columbia.....	3,776,125	21,101,201	813,559 ⁴	634,329	118,349	2,979	21,117
Yukon and Northwest Territories.....	87,764	320,913	—	7,329	5,272	302	1,989
Canada, 1966.....	30,765,024	156,955,934	4,397,333	6,156,595⁵	1,130,621	42,886	286,599
1967							
Newfoundland.....	789,416	3,122,314	—	99,736	21,796	945	5,555
Prince Edward Island..	57,391	181,611	—	28,332	4,786	190	1,070
Nova Scotia.....	695,021	2,886,659	—	229,239	43,018	1,917	10,555
New Brunswick.....	813,221	3,427,318	333,689	177,352	37,512	1,516	8,363
Quebec.....	11,604,761	58,790,198	25,578	1,749,177	339,526	12,318	95,582
Ontario.....	10,249,529	56,834,648	3,101,718 ⁶	2,314,229	454,251	17,399	125,871
Manitoba.....	1,429,279	6,751,879	—	313,603	57,389	2,434	15,982
Saskatchewan.....	1,078,197	3,969,392	—	306,790	61,715	1,648	11,653
Alberta.....	2,050,870	6,798,682	—	439,637	84,989	2,074	14,462
British Columbia.....	4,105,775	22,717,696	532,903 ⁶	662,172	136,799	3,111	23,512
Yukon Territory.....	33,360	117,044	—	3,233	2,236	84	509
Northwest Territories..	58,547	214,543	—	4,426	4,167	230	1,784
Canada, 1967.....	32,965,367	165,811,984	3,993,888	6,327,926	1,248,184	43,866	314,996

¹ Excludes industrial establishments that purchase power and have generating facilities, of which there were 157 in 1966 and 152 in 1967. ² Excludes revenue from sales to industrial establishments that purchase power and have generating facilities; totalling \$78,847,000 in 1966 and \$79,328,000 in 1967.

³ Includes 2,112,603,000 kwh. "no value" energy. ⁴ Includes 810,633,000 kwh. "no value" energy. ⁵ Includes 2,109,553,000 kwh. "no value" energy. ⁶ "No value" energy.

7.—Summary Electric Power Statistics, by Type of Establishment, 1966 and 1967

Year and Item	Electrical Utilities			Industrial Establishments	Total
	Publicly Operated	Privately Operated	Total		
1966					
Installed generating capacity..... kw.	22,461,210	3,286,299 ^r	25,747,509 ^r	5,017,515 ^r	30,765,024
Energy generated.....'000 kwh.	109,184,839	16,813,509	125,998,348	32,136,884	158,135,232
Hydro....."	89,525,777	12,342,630	101,868,407	27,966,023	129,834,430
Thermal....."	19,659,062	4,470,879	24,129,941	4,170,861	28,300,802
Energy Made Available in Canada.. '000 kwh.	..	..	..	..	156,955,934
Disposal of energy in Canada ¹.....'000 kwh.	101,988,412	11,222,693	113,211,105	43,744,829	156,955,934
Energy exported to United States...."	3,096,943	923,629	4,020,572	376,761	4,397,333
Ultimate customers in Canada..... No.	5,607,996	538,911	6,146,907	9,688 ^r	6,156,595
Domestic and farm....."	4,967,248	457,220	5,424,468	8,932 ^r	5,433,400
Commercial....."	550,417	66,833	617,250	710	617,960
Power....."	83,044	13,944	96,988	32	97,020
Street lighting....."	7,287	914	8,201	14	8,215
Revenue from ultimate customers ² ... \$'000	1,004,289	124,039	1,128,328	2,293	1,130,621
Revenue from exports to United States"	1,899	4,185	6,084	1,575	7,659
Employees..... No.	38,365	4,521	42,886	..	..
Salaries and wages..... \$'000	260,834	25,765	286,599	..	..
1967					
Installed generating capacity..... kw.	23,961,801	3,758,953	27,720,754	5,244,613	32,965,367
Energy generated.....'000 kwh.	116,818,569	16,482,399	133,300,968	32,323,855	165,624,823
Hydro....."	92,677,039	12,025,515	104,702,554	28,044,749	132,747,303
Thermal....."	24,141,530	4,456,884	28,598,414	4,279,106	32,877,520
Energy Made Available in Canada.. '000 kwh.	..	..	..	..	165,811,984
Disposal of energy in Canada ¹.....'000 kwh.	110,093,288	11,900,143	121,993,431	43,818,553	165,811,984
Energy exported to United States...."	3,028,964	701,306	3,730,270	263,618	3,993,888
Ultimate customers in Canada..... No.	5,778,714	542,628	6,321,342	6,584	6,327,926
Domestic and farm....."	5,122,855	461,633	5,584,488	6,188	5,590,676
Commercial....."	569,449	68,690	638,139	365	638,504
Power....."	78,655	11,355	90,010	17	90,027
Street lighting....."	7,755	950	8,705	14	8,719
Revenue from ultimate customers ² ... \$'000	1,113,496	132,622	1,246,118	2,066	1,248,184
Revenue from exports to United States"	2,570	3,501	6,071	1,660	7,731
Employees..... No.	39,200	4,666	43,866	..	..
Salaries and wages..... \$'000	285,470	29,428	314,898	..	..

¹ Excludes sales by electrical utilities to industrial establishments with generating facilities, sales by industrial establishments with generating facilities to electrical utilities, and inter-industrial sales.

² Excludes revenue from sales by electrical utilities to industrial establishments with generating facilities, and inter-industrial sales.

8.—Electric Power Generated classified by Type of Establishment, by Province, 1966 and 1967

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1966				
Newfoundland.....	26,927	2,340,234	556,969	2,924,130
Prince Edward Island.....	5,599	150,318	—	155,917
Nova Scotia.....	1,103,303	1,516,508	252,547	2,872,358
New Brunswick.....	2,460,789	122,547	637,007	3,220,343
Quebec.....	39,579,347	6,080,712	17,081,566	62,741,625
Ontario.....	44,324,018	1,533,208	2,725,781	48,583,007
Manitoba.....	6,102,059	—	68,219	6,170,278
Saskatchewan.....	3,113,758	638,115	190,401	3,942,274
Alberta.....	1,635,976	4,103,256	409,456	6,148,688
British Columbia.....	10,593,307	307,089	10,155,303	21,055,699
Yukon and Northwest Territories.....	239,756	21,522	59,635	320,913
Canada, 1966.....	109,184,839	16,813,509	32,136,884	158,135,232
1967				
Newfoundland.....	490,012	2,167,961	547,735	3,205,708
Prince Edward Island.....	6,684	174,927	—	181,611
Nova Scotia.....	1,318,202	1,347,130	294,269	2,959,601
New Brunswick.....	2,907,702	137,198	589,841	3,634,741
Quebec.....	41,326,422	5,711,822	16,845,794	63,884,038
Ontario.....	47,557,645	1,588,270	2,960,644	52,106,559
Manitoba.....	6,498,918	—	65,876	6,564,794
Saskatchewan.....	3,516,507	634,927	211,196	4,362,630
Alberta.....	1,893,323	4,390,410	515,295	6,799,028
British Columbia.....	11,035,446	305,921	10,253,159	21,594,526
Yukon Territory.....	92,366	16,852	7,826	117,044
Northwest Territories.....	175,342	6,981	32,220	214,543
Canada, 1967.....	116,818,569	16,482,399	32,323,855	165,624,823

Average domestic and farm consumption rose from 5,914 kwh. in 1966 to 6,261 kwh. in 1967. Among the provinces, the averages in 1967 varied from a low of 2,981 kwh. in Prince Edward Island to a high of 7,837 kwh. in Manitoba. For domestic and farm customers the average annual bill was \$90.71 in 1967 as against \$83.47 in 1966, an increase of 8.7 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from 7,720 kwh. per customer in 1966 to 8,548 kwh. in 1967 and the average bill from \$134.22 to \$145.08.

9.—Domestic and Farm Service by Electric Utilities and Industrial Establishments, 1963-67

Item	1963	1964	1965	1966	1967
Customers..... No.	4,980,351	5,139,545	5,282,471	5,433,400 ^r	5,590,676
Kilowatt-hours sold..... '000	25,321,606	27,277,574	29,737,741	32,131,003	35,005,414
Revenue received..... \$'000	383,983	401,194	424,924	453,534	507,131
Kilowatt-hours per customer..... No.	5,084	5,307	5,630	5,914 ^r	6,261
Average annual bill..... \$	77.10	78.06	80.44	83.47 ^r	90.71
Revenue per kwh..... cts.	1.52	1.47	1.43	1.41	1.45

In 1967, natural gas accounted for 18.9 p.c. of thermal generation by utilities, coal for 65.1 p.c., petroleum fuels for 15.5 p.c. and nuclear fuel for 0.5 p.c.; corresponding proportions in 1966 were 21.7 p.c., 65.7 p.c., 11.9 p.c., and 0.7 p.c., respectively.

10.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1966 and 1967

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	Imp. gal.	\$	Mcf.	\$
1966						
Newfoundland.....	—	—	19,663,021	1,669,354	—	—
Prince Edward Island.....	—	—	13,059,423	860,417	—	—
Nova Scotia.....	880,714	7,808,885	30,303,577	2,012,912	—	—
New Brunswick.....	323,799	2,731,044	59,982,084	3,800,229	—	—
Quebec.....	—	—	13,028,501	1,295,478	—	—
Ontario.....	3,858,489	34,382,963	6,640,949	1,068,130	332,962	150,921
Manitoba.....	86,727	374,983	5,525,748	842,244	174,615	50,582
Saskatchewan.....	1,230,002	2,421,456	11,964,751	711,245	12,829,268	2,392,552
Alberta.....	1,499,049	1,806,289	6,715,602	549,205	30,060,165	4,951,671
British Columbia.....	—	—	40,409,447	4,160,716	20,877,717	5,641,502
Yukon and Northwest Territories...	—	—	2,091,874	523,072	—	—
Canada, 1966.....	7,878,780	49,525,620	209,384,957	17,493,002	64,274,727	13,187,228
1967						
Newfoundland.....	—	—	13,795,864	1,515,074	—	—
Prince Edward Island.....	—	—	14,894,523	989,850	—	—
Nova Scotia.....	834,545	7,633,539	31,102,194	2,065,540	—	—
New Brunswick.....	303,387	2,501,697	78,003,885	4,774,353	—	—
Quebec.....	—	—	70,488,766	5,744,641	—	—
Ontario.....	4,889,554	43,591,743	8,678,440	1,283,608	321,949	139,244
Manitoba.....	41,673	170,234	5,672,923	903,479	65,160	20,437
Saskatchewan.....	1,470,975	3,367,513	15,057,540	772,418	13,835,603	2,663,765
Alberta.....	1,573,239	1,910,883	5,719,615	542,586	34,838,683	5,834,098
British Columbia.....	—	—	50,095,929	4,608,451	18,491,919	5,027,957
Yukon Territory.....	—	—	763,078	199,377	—	—
Northwest Territories.....	—	—	3,851,263	851,928	—	—
Canada, 1967.....	9,113,373	59,175,609	298,114,020	24,251,305	67,553,314	13,685,141

Section 5.—Public Ownership and Regulation of Electrical Utilities

Federal Government regulation of electrical utilities, particularly with respect to the export of electric power and the construction of lines over which such power is exported, falls within the jurisdiction of the National Energy Board (see pp. 961-962).

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 8, p. 682, giving statistics by type of establishment, shows that 70 p.c. of the total electric power generated in 1967 was produced by publicly operated utilities, 10 p.c. by privately operated utilities and 20 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output at one time was predominantly from privately owned plants but in Ontario almost all electric power has been produced by a publicly owned utility for over 60 years. Figures for 1962 and subsequent years show a much greater proportion of publicly operated electrical utilities since they reflect the provincial take-over of privately owned facilities in both British Columbia and Quebec.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. Neither Alberta nor Prince Edward Island has a provincially operated electric power system. The functions and activities of provincially operated electric power commissions are summarized in the following paragraphs.

Newfoundland.—The Newfoundland and Labrador Power Commission was established by the provincial government in 1954 for the purpose of supplying electric power wherever needed throughout the province, particularly in rural areas. The Commission began large-scale production of electric power in 1967 when the Bay d'Espoir plant began operating and a provincial transmission grid was established. Prior to this, the only means of providing electricity to the isolated areas was through the Rural Electricity Authority and the Power Distribution Districts.

Nova Scotia.—With total fixed assets of \$144,133,409, including \$31,689,425 worth of work in progress, the self-supporting Nova Scotia Power Commission is one of the largest businesses in the province, employing nearly 1,000 people. The Commission was created under the Power Commission Act of 1919 to exploit the limited but useful hydro potential of the province, as investigated by the Water Power Commission of 1915. The first objective was to develop remote sites to supply power and energy at lowest possible cost to new industry, particularly pulp and paper operations, and a few centres of population. The 1937 Rural Electrification Act, however, provided equalization grants and made it possible to carry out the formidable task of bringing power and energy to low-density farm and rural village areas. In the past 30 years the picture has changed markedly, with a progressive industrial climate providing both a stable base and strong opportunities for growth. The Commission's power development program in 1967-68 is outlined on p. 671.

More than 5,680 miles of transmission and distribution lines conduct the energy generated by about 303,000 kw. capability in 26 stations to and from every corner of Nova Scotia. Hydro power now constitutes only a fraction of base load, although it is put to optimum use for peaking purposes. Economical thermal power has risen greatly in importance during the past 10 years and holds most of the answers for the future—with the possible exception of Bay of Fundy tidal power.

11.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1967

System ¹ and First Year of Operation	Present Installed Capacity	Output	System ¹ and First Year of Operation	Present Installed Capacity	Output
	kw.	kwh.		kw.	kwh.
Western Network—			Mersey—		
Harmony (1943).....	600	3,614,000	Original development		
Roseway (1930).....	888	4,961,000	(1928).....	21,780	100,897,000
Gulch (1952).....	6,000	21,234,198	Cowie Falls (1938).....	7,200	36,186,400
Ridge (1957).....	4,000	8,374,351	Deep Brook (1950).....	9,000	42,804,900
Sissiboo (1960).....	6,000	26,897,540	Lower Great Brook (1955).....	4,500	16,904,620
Weymouth (1961).....	18,000	41,562,640			
Eastern Network—			Canseau (diesel) (1937).....	770	12,700
Barrie Brook (1940).....	360	1,079,500	Tusket (1929).....	2,160	15,773,232
Dickie Brook (1948).....	3,800	9,677,680			
Malay Falls (1924).....	3,600	11,977,880	Cumberland—		
Ruth Falls (1925).....	6,970	36,915,620	Maccan (thermal) (1927).....	26,850	78,521,400
Liscomb (1957).....	450	3,076,052	Seaboard (thermal) (1930).....	110,000	551,590,600
Trenton (thermal) (1951).....	60,000	262,748,900			
St. Margaret (1921).....	10,400	34,670,000	Totals.....	303,328	1,309,420,213

¹ Hydro unless otherwise noted.

New Brunswick.—The New Brunswick Electric Power Commission was incorporated under the Electric Act, 1920. Generating stations owned by the Commission at Mar. 31, 1968 were as follows:—

<u>Plant</u>	<u>Type</u>	<u>Capacity</u>	<u>Plant</u>	<u>Type</u>	<u>Capacity</u>
		kw.			kw.
Grand Falls.....	Hydro	60,500	Grand Lake.....	Steam	104,910
Musquash.....	Hydro	7,500	Saint John (Dock St.)..	Steam	16,785
Tobique.....	Hydro	20,000	Chatham.....	Steam	36,155
Beechwood.....	Hydro	115,000	Grand Manan.....	Diesel	1,713
Milltown.....	Hydro	3,200	Mactaquac.....	Hydro	240,000
Sisson.....	Hydro	9,500			
Courtenay Bay.....	Steam	269,300	TOTAL CAPACITY.....		884,563

All the above generating units with the exception of Grand Manan are interconnected in a province-wide grid system. The statistical information given in Table 12 shows the growth of the Commission's undertakings from 1964. Power plant construction under way in New Brunswick during 1967-68 is outlined at p. 671.

12.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1964-68

<u>Item</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
High-voltage transmission line... miles	1,947	2,093	2,255	2,315	2,495
Distribution line..... "	8,447	8,528	8,586	8,664	8,671
Direct customers..... No.	118,443	121,036	124,030	124,753	128,457
Plant capacities..... kw.	406,636	419,761	430,261	540,961	884,563
Power generated (incl. purchases) kwh.	1,797,928,340	2,207,165,360	2,571,484,730	3,013,532,860	3,356,151,990
Capital invested..... \$	184,956,439	205,192,238	247,896,370	291,563,329	343,927,953
Revenue..... \$	24,650,853	29,244,088	33,108,342	37,601,262	40,565,894

Quebec.—Stream and Reservoir Control.—The Quebec Streams Commission was created in 1910 (SQ 1910, c. 5) and given additional powers in 1912 (RSQ 1925, c. 46) and 1930 (SQ 1930, c. 34); it was authorized to ascertain the water resources of the province, to make recommendations regarding their control and to construct and operate certain storage dams to regulate the flow of streams. In 1955, the Commission was abolished and its powers and attributions transferred to the Hydraulic Resources Department, now the Department of Natural Resources. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the Chicoutimi, the Au Sable and the Métis. The Commission also operated nine reservoirs on the North River, two in the watershed of the Ste. Anne de Beaupré River and one at the outlet of Lake Morin on Rivière du Loup (lower). In 1965, eleven auxiliary reservoirs on the St. Maurice System and two on the Gatineau were turned over by the Department of Natural Resources to the Quebec Hydro-Electric Commission for operation and maintenance.

Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River controlled by the Aluminum Company of Canada; the Onatchiway on the Shipshaw River controlled by Price Brothers and Company Limited; Memphremagog Lake on the Magog River controlled by the

Dominion Textile Company; and Témiscamingue and Quinze Lakes on the Ottawa River controlled by the federal Department of Public Works. Storage reservoirs under the control of the Quebec Hydro-Electric Commission are: Témiscouata Lake on the Madawaska River, Kipawa Lake on the Ottawa River, Lac Dozois on the upper Ottawa River, Lac Cassé in the Bersimis River watershed and Lac Ste. Anne on the Toulouste River, a tributary of the Manicouagan River.

The Quebec Hydro-Electric Commission.—The Quebec Hydro-Electric Commission was established in 1944 (SQ 1944, c. 22) for the purpose of supplying power to the municipalities, to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. On May 1, 1963, the Commission acquired control of the following privately owned electrical utilities operating in the Province of Quebec: the Shawinigan Water and Power Company, the St. Maurice Power Corporation, the Quebec Power Company, the Southern Canada Power Company, the Gatineau Power Company, the Northern Quebec Power Company, the Saguenay Electric Company, and the Lower St. Lawrence Power Company. As a result of these transactions, all electricity production, except for facilities operated by certain industrial organizations in their own manufacturing operations, was brought under the control of a single authority. The services of the Commission now cover virtually the entire province except for local distribution of small amounts of electricity by some municipalities, most of which is purchased from the Commission or its subsidiaries.

At the end of 1967 Hydro-Quebec and its subsidiaries had in operation 51 hydro-electric stations (nine of which were under construction) having a capacity of 7,678,721 kw., and 18 thermal-electric stations (one of which was being enlarged) having a capacity of 500,268 kw.—a total capacity in operation of 8,178,989 kw. These facilities permit the balanced distribution of power throughout Quebec and the most efficient use of the water power resources of the province. Power plant construction under way in Quebec during 1967-68 is outlined at p. 672.

13.—Summary Statistics of the Operations of the Quebec Hydro-Electric Commission, 1966 and 1967

Item	1966	1967
Installed capacity.....kw.	7,763,244	8,178,989
Hydro.....kw.	7,417,501	7,678,721
Thermal.....kw.	345,743	500,268
Consolidated system peak load.....kw.	7,388,000	7,542,000
Available energy.....'000,000 kw.	44,013	45,778
Total electricity sales.....\$	313,580,432	353,508,344
Customers, at Dec. 31.....No.	1,581,241	1,646,302
Revenue.....\$	321,496,000	365,703,000
Operating expenditures, incl. power purchases.....\$	200,526,000	210,454,000
Capital expenditures.....\$	317,062,293	291,251,392
Properties and plant at cost.....\$	3,256,597,369 ^x	3,527,376,943
Employees, at Dec. 31, excl. construction personnel.....No.	11,466	11,637
Salaries and wages paid, excl. construction.....\$	86,278,000	91,606,000

Ontario.—The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and subsequently modified from time to time (RSO 1960, c. 300, as amended). The Commission may have from three to six members, all of whom are appointed by the Lieutenant-Governor in Council. Two commissioners may be members of the Executive Council of the Province of Ontario.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power supply facilities, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, the province has materially assisted the development of agriculture by contributing under the Hydro-Electric Distribution Act toward the capital cost of extending rural distribution facilities.

The entire provincial area served is regarded for financial and administrative purposes as a unit, but there is no electrical connection between the Commission's facilities in north-western Ontario and those serving customers in the remainder of the province. Statistics are therefore presented for two operating systems, the East System and the West System; the systems respectively serve the areas east and west of a line extending north from Lake Superior to the Albany River, a line that roughly conforms with the boundary dividing Thunder Bay District from the Districts of Algoma and Cochrane.

In addition to administering the enterprise over which it has direct control, the Commission, under the Power Commission Act and the Public Utilities Act, exercises certain regulatory functions, particularly with respect to the group of municipal electrical utilities which it serves. In order to provide convenient and expeditious service in this dual function of regulation and supply, the Commission subdivides its province-wide operations into seven regions with regional offices located in seven major municipalities.

The Commission is concerned primarily with the provision of electric power by generation or purchase and its delivery to the electrical utilities for resale in municipalities having cost contracts with the Commission. The Commission also supplies power in bulk, although not under cost contract, to direct customers, including industrial customers whose requirements are so large or so unusual as to make service by the local municipal utilities impracticable, mines, industries in unorganized territories, and certain interconnected systems.

In addition to these operations, which represent about 90 p.c. of its energy sales, the Commission delivers electric power to retail customers in rural areas and in a small group of 28 municipalities served by Commission-owned local distribution facilities. Retail service throughout the province is provided for the most part, however, by the municipal electrical utilities, which supply ultimate customers in most cities and towns, in many villages, and in certain populous township areas. The municipal electrical utilities are owned and operated by local commissions.

During 1967, the Commission's investment in fixed assets at cost increased by \$235,743,588 and at the end of the year amounted to \$3,361,203,761. Assets, after deducting accumulated depreciation, were \$3,443,349,418. In that year, 355 associated municipal electrical utilities engaged in the retail distribution of electricity purchased power from the Commission. The assets of these utilities, after deducting accumulated

depreciation, amounted to \$1,067,514,191, of which \$439,046,394 represented the equity acquired in the Commission's systems by the municipal utilities operating under cost contracts.

The Commission's power development program as at Dec. 31, 1967 is given in Table 14 and is also outlined at pp. 672-673.

**14.—Power Developments of The Hydro-Electric Power Commission of Ontario,
Under Construction or Approved as at Dec. 31, 1967**

Development and Location	Units	In-Service Dates	Total Installed Capacity
	No.		kw.
Coal-fired Thermal-Electric—			
Lakeview—Lake Ontario, near Toronto.....	8	1961-68	2,400,000
Lambton-St. Clair River, south of Sarnia.....	4	1969-70	2,000,000
Nanticoke—Lake Erie, near Port Dover.....	4	1971-74	2,000,000
Nuclear-fuelled Thermal-Electric—			
Douglas Point—Lake Huron, near Kincardine.....	1	1967	200,000
Pickering—Lake Ontario, east of Toronto.....	4	1970-73	2,160,000
Combustion-Turbine—			
Various sites.....	27	1965-68	319,000
Hydro-Electric—			
Mountain Chute—Madawaska River.....	2	1967	139,500
Barrett Chute (extension)—Madawaska River.....	2	1968	111,600
Stewartville (extension)—Madawaska River.....	2	1969	91,800
Aubrey Falls—Mississagi River.....	2	1969	130,150
Wells—Mississagi River.....	2	1970	215,000 ¹
Lower Notch—Montreal River.....	3	1971	244,000 ¹

¹ Tentative.

**15.—Resources of The Hydro-Electric Power Commission of Ontario Generated
and Purchased (All Systems), December 1965-67**

Year and System	Hydro-Electric Stations ¹	Thermal-Electric Stations ¹	Power Purchased
	kw.	kw.	kw.
December 1965—			
East System.....	4,391,350	2,600,000	521,300
West System.....	593,500	93,000	—
Totals.....	4,984,850	2,693,000	521,300
December 1966—			
East System.....	4,526,350	2,737,000	521,500
West System.....	585,800	93,000	—
Totals.....	5,112,150	2,830,000	521,500
December 1967—			
East System.....	4,611,000	3,176,000	522,500
West System.....	585,800	100,000	—
Totals.....	5,196,800	3,276,000	522,500

¹ Dependable peak capacity—the amount of power which resources can be expected to supply at the time of the system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the terms of the purchase contract.

16.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1963-67

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1963	1964	1965	1966	1967
	kw.	kw.	kw.	kw.	kw.
East System.....	6,684,726	7,107,690	7,765,107	8,259,355	8,830,375
West System.....	615,570	581,100	583,300	580,100	598,700
Totals.....	7,300,296	7,688,790	8,348,407	8,839,455	9,429,075

17.—Growth of The Hydro-Electric Power Commission of Ontario, 1958-67

Year	Ultimate Customers Served Directly or Indirectly	Total Power Distributed ¹	Assets of Commission and Municipal Utilities
	No.	kw.	\$
1958.....	1,757,405	5,417,536	2,756,758,142
1959.....	1,830,453	6,018,204	2,909,088,086
1960.....	1,881,472	6,157,534	3,044,800,819
1961.....	1,938,897	6,463,932	3,196,429,522
1962.....	1,991,239	6,968,885	3,148,330,722
1963.....	2,041,732	7,300,296	3,225,289,707
1964.....	2,095,754	7,688,790	3,331,568,632
1965.....	2,142,281	8,348,407	3,533,238,103
1966.....	2,187,767	8,839,455	3,777,633,871
1967.....	2,245,715	9,429,075	4,071,817,215

¹ Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

Manitoba.—Manitoba Hydro is the primary developing, generating and distributing power agency in the Province of Manitoba. The corporation came into being Apr. 1, 1961, following amalgamation of the two former provincial government utilities engaged in the generation and distribution of electric power.

Manitoba Hydro operates six hydro-electric generating stations, two thermal-electric generating stations and 19 small diesel-electric generating plants. The combined generating capability is 1,224,500 kw., hydro installations accounting for 934,000 kw., thermal installations for 278,000 kw. and diesel installations for 12,500 kw. Four hydro stations are located on the Winnipeg River near Winnipeg, one is on the Saskatchewan River, 285 miles north of Winnipeg, and one is on the Nelson River, 450 miles northeast of Winnipeg. All six hydro stations and the thermal generating stations at Selkirk and Brandon are electrically interconnected to a common network known as the Manitoba Integrated System. Diesel installations are used to provide power to isolated northern communities where extension of hydro-electric transmission facilities are not feasible.

Manitoba Hydro serves over 600 communities and 226,821 consumers in rural Manitoba and suburban Winnipeg through a network of 35,930 miles of transmission and farm distribution lines. In addition, Manitoba Hydro supplies part of The Winnipeg Hydro-Electric System power requirements within the corporate limits of Winnipeg. Power plant construction in Manitoba in 1967-68 is outlined at pp. 673-674.

Saskatchewan.—The Saskatchewan Power Corporation was established in 1949, and operates under the provisions of the Power Corporation Act (RSS 1965, c. 40, as

amended); it succeeded the Saskatchewan Power Commission which had operated from 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase and to transmit, distribute, sell and supply natural or manufactured gas.

During 1966, the Corporation served approximately 1,000 urban-size communities in retail sales, and served the cities of Saskatoon and Swift Current, the town of Battleford and the hamlet of Waskesiu in bulk sales. As at Dec. 31, the Corporation served 263,900 retail customers and 45,303 customers located in communities supplied with power through bulk sales, a total of 309,203. The retail customers included 192,776 urban customers and 71,124 classified as rural, mainly farm meters. During 1967, 3,705,977,000 kwh. were supplied to its system, of which 3,499,296,000 kwh. were generated in Corporation plants and 206,681,000 kwh. were purchased in bulk. At the end of the year, the Corporation had invested, at cost, \$427,317,000 in electric system assets out of a total of \$600,571,000 in plant-in-service in the combined electric and natural gas systems.

The hydro-electric generating station at Squaw Rapids produced 27.7 p.c. of the gross generation in 1967. At year-end, the Corporation also owned and operated six steam generating plants—two each at Saskatoon and Estevan, and one each at Regina and Moose Jaw, the latter operated only during the peak months. Steam supplied 65.7 p.c. of total system requirements and three internal combustion gas dual fuel plants—the Kindersley, the Swift Current, and the Regina B—supplied most of the remainder. System capability in operation was assessed at 913,000 kw. with 537,000 kw. in steam plants, 280,000 kw. in hydro and 96,100 kw. in gas turbine and internal combustion units. The Corporation owned and operated 74,722 miles of transmission and rural lines (excluding urban distribution). Power plant construction in Saskatchewan in 1967-68 is outlined at p. 674.

18.—Growth of the Saskatchewan Power Corporation, 1958-67

Year	Communities Served in Bulk and Retail Sales	Individual Meters in Communities Served	Power Distributed	Revenue
	No.	No.	kwh.	\$
1958.....	880	188,293	909,086,629	20,687,771
1959.....	962	197,451	1,067,349,615	23,909,113
1960.....	984	221,675	1,233,531,753	26,667,471
1961.....	901	229,336	1,498,055,955	30,263,598
1962.....	961 ¹	235,386	1,645,862,278	33,106,018
1963.....	969	240,812	1,926,862,734	36,892,949
1964.....	976	246,389	2,208,149,680	39,777,472
1965.....	984	294,135	2,871,800,000	46,145,000
1966.....	1,006	303,016	3,391,829,000	52,866,000
1967.....	1,075	309,203	3,705,977,000	57,200,000

¹ November 1962 figure.

Alberta.—The generation and distribution of electric power in Alberta is handled by a combination of several municipally owned urban systems and three investor-owned companies serving the greater part of the province. The regulatory authority over the investor-owned systems is the Public Utilities Board, which has jurisdiction over the distribution and sale of electricity. The Board, which controls franchises and rates, has power to hold investigation upon complaint either by a municipality or by a utility company, and following such investigation may fix just and reasonable rates. The Alberta Power Commission controls all phases of system development, including the provincial grid system.

Power plant construction in Alberta in 1967-68 is outlined at p. 675.

British Columbia.—The British Columbia Hydro and Power Authority is a corporation and an agency of the Crown in right of the Province of British Columbia. The Authority operates an extensive system of public utility services. Electric energy is generated, transmitted and distributed throughout areas of the province containing more than 90 p.c. of the population. Natural gas is purchased and distributed in Greater Vancouver and in the Fraser Valley eastward to Hope and liquefied petroleum gas-air is distributed in Greater Victoria. The Authority operates three transportation services: an urban passenger transportation system serves Greater Vancouver and Greater Victoria; an interurban passenger transportation system serves Greater Vancouver, the Fraser Valley eastward to Hope, between Vancouver and Victoria and between Vancouver and Nanaimo (via ferries of the British Columbia Ferry Authority); and a rail freight system serves Greater Vancouver and the Fraser Valley eastward to Chilliwack.

Of the Authority's total electric power requirements of 12,361,000,000 kwh. for the year ended Mar. 31, 1968, 8,295,000,000 kwh. or 67.1 p.c. were produced by hydro-electric stations and 2,795,000,000 kwh. or 22.6 p.c. by thermal plants; of the remainder, 419,000,000 kwh. were purchased and 852,000,000 kwh. were received from the United States as Canada's share of downstream power benefits resulting from early completion of the Columbia River Treaty storage project at Duncan Lake. Kilowatt-hours of electricity sold during the year (11,084,000,000) were 10.8 p.c. higher than during the previous year. Impressive rates of increase in kilowatt-hours consumed were recorded for all categories of customers during 1967-68. Residential consumption moved up 8.8 p.c., general consumption 15.6 p.c., and industrial and bulk power 8.8 p.c. At Mar. 31, 1968, the number of customers served with electricity by the Authority totalled 583,133, an increase of 28,104 during the year. The average annual rate for residential customers rose from 1.48 cents to 1.68 cents a kilowatt-hour, and the average annual residential consumption rose from 6,016 kwh. to 6,222 kwh.

Power plant construction in British Columbia in 1967-68 is outlined at pp. 675-676.

19.—Summary Statistics of the British Columbia Hydro and Power Authority, Year Ended Mar. 31, 1968

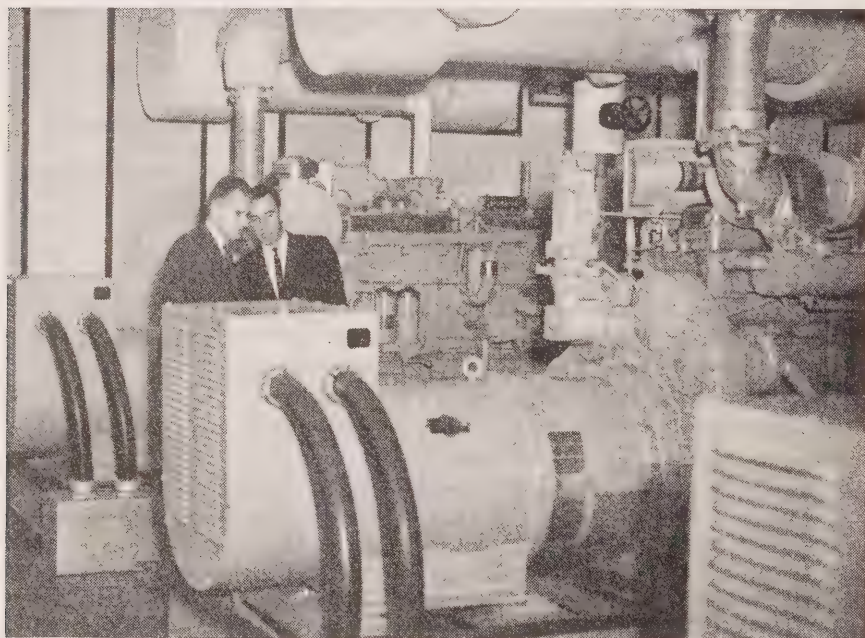
Item	Amount	Item	Amount
Generating capacity..... kw.	2,225,672	Proportionate Sales—	
Hydro..... “	1,320,322	Residential..... p.c.	28
Thermal and diesel..... “	905,350	Other systems (mainly residential) “	2
		Commercial, industrial, etc..... “	70
Power requirements..... '000 kwh.	12,360,547	Pole Miles of Line—	
Generated..... “	11,089,510	Transmission (high voltage)..... No.	5,488
Purchased..... “	419,494	Distribution primaries ¹ “	14,518
Duncan storage downstream benefit “	851,543	Revenue (electric)..... \$'000	137,672
Customers at year-end..... No.	583,133	Capital Investment—	
Electricity sold..... '000 kwh.	11,083,962	Gross plant in operation (electric) \$'000	1,230,243
		Net plant in operation (electric) \$'000	979,664

¹Including 501 underground circuit miles.

Northwest Territories and Yukon Territory.—The Northern Canada Power Commission, formerly the Northwest Territories Power Commission, was created by Act of Parliament in 1948 to supply electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include the Yukon Territory. The Commission has authority to construct and operate public utility plants in the Territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse and the Mayo River near Mayo in the Yukon Territory, and on the Snare River northwest of Yellowknife and the Taltson River northeast of Fort Smith in the Northwest Territories. Diesel-electric plants are operated at Fort Simpson, Fort Resolution, Fort McPherson, Aklavik, Cambridge Bay and Coppermine, N.W.T., Dawson, Y.T., and Field, B.C., and utility plants comprising power, central heat and water and sewerage services at Inuvik and Frobisher Bay, N.W.T., and at Moose Factory, Ont. Operation of diesel plants at Chesterfield Inlet and Baker Lake, N.W.T., was undertaken by the Commission in 1968, and a gas turbine power plant was commissioned at Norman Wells in that year.

The Whitehorse Rapids power development, in service since 1958, supplies the Department of National Defence and the Department of Public Works at Whitehorse, most of the power for the city of Whitehorse, and a copper mining operation located within a few miles of Whitehorse. A 225-mile transmission line is being constructed (completion 1969) to supply the Anvil Mining Company property in central Yukon. The two Snare River hydro developments, placed in service in 1948 and 1960, supply power to the gold mines in the Yellowknife area and to the town of Yellowknife; these two hydro plants are operated by remote control from Yellowknife. The Mayo River plant has supplied power to mining properties in the Elsa and Keno areas and to the communities of Mayo and Keno City since 1952. The Taltson River Hydro project commissioned in late 1965, which is to date the largest Canadian power development north of the 60th parallel, supplies the lead-zinc mining operation at Pine Point, and the communities of Fort Smith and Pine Point; the plant is operated by remote control from Fort Smith.



Installation of total energy systems, providing on-site electricity for all requirements, is coming into prominence in hotels, apartments, shopping centres, office buildings, institutions and industrial plants. Cost reduction results from the utilization of heat wasted in normal generator operation for such purposes as heating and air conditioning.

CHAPTER XVI.—MANUFACTURES*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Developments in Manufacturing

Subsection 1.—Annual Census of Manufactures, 1966

Although 1966 was a year of some slackening in the business expansion which began in 1961, employment in the manufacturing industries showed its second largest annual increase of the 1961-66 period. The total number of employees in manufacturing rose 4.8 p.c. over 1965 compared with a rise of 5.3 p.c. in 1965 over 1964, which was the highest gain of the period. These increases brought total employees in 1966 to 1,646,024.

The manufacturing industries' shipments of goods of their own manufacture reached a total of \$37,303,500,000 in 1966, 10.1 p.c. above 1965. Value added by manufacture increased 9.5 p.c. to \$16,352,000,000 and value added (total activity) advanced 9.3 p.c. to \$17,260,000,000. Among the provinces, Ontario showed the largest percentage gain in total employees but the Prairie Provinces had the three highest rates of increase in value of shipments of goods of own manufacture.

Higher capital expenditures in the economy, despite the decline in new residential construction, gave a stimulus to some industries during 1966. Consumer expenditures were higher but accounted for the lowest percentage of the gross national expenditure in several years. Exports of motor vehicles and parts continued to rise under the Canada-United States Agreement on Automotive Products but offsetting factors combined to cause production of new passenger cars, which had increased sharply in 1965, to decrease slightly. Domestic shipments of passenger cars dropped nominally, reflecting a pause in the upward surge of consumer spending on new cars.

Employment changes made by all industry groups in 1966 are shown in Table 1. It should be noted that fluctuations are subject to the effects, generally minor, of reclassification of establishments.

Employment in the transportation equipment industries was 8.5 p.c. higher than in 1965. This group accounted for 15.1 p.c. of the over-all employment increase in manufac-

* Prepared in the Manufacturing and Primary Industries Division, Dominion Bureau of Statistics.

turing, the largest contribution. In second place the largest contribution was made by the electrical products industries, although this group showed the largest relative gain in employment at 9.7 p.c. These two groups contained the two industries making the largest contributions to higher over-all employment—the aircraft and parts manufacturers which reported 6,145 more employees, a gain of 22.2 p.c., and communications equipment manufacturers which reported 4,996 more employees, a gain of 14.9 p.c. Marked increases were registered in the exports of products typical of both these industries in 1966. The numerical increase in employment by aircraft and parts manufacturers was of the same order as that shown by motor vehicle manufacturers the year before. Although motor vehicle manufacturers reported a nominal decline in employment in 1966, motor vehicle parts and accessories manufacturers, reflecting effects of the Agreement on Automotive Products, increased their employment by 8.7 p.c. Another transportation equipment industry—miscellaneous vehicle manufacturers—although small in size, registered the second highest relative gain over 1965 of any industry; it reported a 62.9-p.c. increase in number of employees, most of them probably employed in the manufacture of snow-mobiles.

1.—Analysis of Employment Increase, by Industry Group, 1965-66

(Ranked by numerical increase)

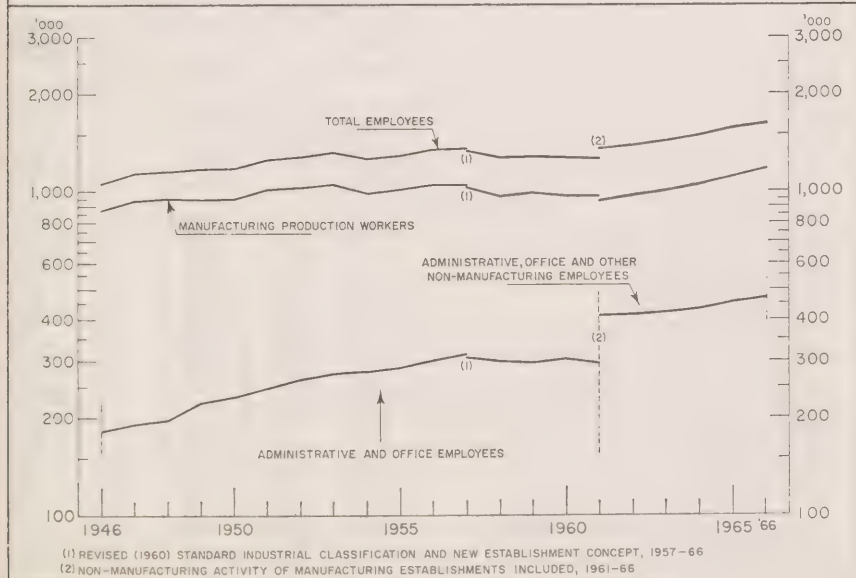
Rank	Industry Group	Total Employees		Numerical Increase, 1965-66		
		1965	1966	Actual	Proportion of Over-all Increase	
					Industry Group	Cumulative
		No.	No.	No.	p.c.	p.c.
1	Transportation equipment industries.....	135,481	146,932	11,451	15.1	15.1
2	Electrical products industries.....	113,463	124,498	11,035	14.6	29.7
3	Metal fabricating industries.....	133,992	143,311	9,319	12.3	42.0
4	Paper and allied industries.....	110,180	116,840	6,660	8.8	50.8
5	Food and beverage industries.....	220,700	227,221	6,521	8.6	59.4
6	Primary metal industries.....	107,504	113,645	6,141	8.1	67.5
7	Miscellaneous manufacturing industries.....	62,624	67,534	4,910	6.5	74.0
8	Machinery industries.....	70,683	75,451	4,768	6.3	80.3
9	Printing, publishing and allied industries.....	78,737	81,996	3,259	4.3	84.6
10	Furniture and fixture industries.....	40,374	43,598	3,224	4.3	88.9
11	Chemical and chemical products industries.....	70,975	73,317	2,342	3.0	91.9
12	Non-metallic mineral products industries.....	51,218	53,189	1,971	2.6	94.5
13	Rubber industries.....	26,206	27,821	1,615	2.1	96.6
14	Petroleum and coal products industries.....	14,330	15,403	1,073	1.4	98.0
15	Clothing industries.....	98,659	99,708	1,049	1.4	99.4
16	Textile industries.....	76,676	77,248	572	0.8	100.2
17	Wood industries.....	91,589	91,937	348	0.5	100.7
18	Leather industries.....	32,585	32,589	4	—	100.7
19	Tobacco industries.....	10,253	10,177	-76	-0.1	100.6
20	Knitting mills.....	24,070	23,809	-461	-0.6	100.0
	All Industries.....	1,570,299	1,646,024	75,725	100.0	100.0

Employment in the furniture and fixture industries increased 8.0 p.c., contributing the third largest relative increase in 1966. More than half of the rise originated in the large household furniture industry, although the smaller office furniture industry showed a higher relative gain. Fourth in relative increase was the miscellaneous manufacturing industries group, reflecting, particularly large relative and numerical increases by plastics fabricators, *n.e.s.*

Of the various industry groups, seven showed, in 1966, their largest year-to-year percentage increase in employment of the 1961-66 period. These were the food and beverage industries, the rubber industries, the furniture and fixture industries, the paper and allied products industries, the electrical products industries, the petroleum and coal products industries and the miscellaneous manufacturing industries. The textile industries, wood industries and knitting mills groups showed their lowest year-to-year percentage change of the 1961-66 period in 1966. Although higher newsprint exports contributed to the growth of the paper and allied products industries, as noted, a decline in United States housing construction affected Canadian lumber exports which was reflected in employment in the wood industries.

In addition to the seven industry groups showing their highest annual gain in 1966, four other groups—printing, publishing and allied industries, primary metal industries, transportation equipment industries, and chemical and chemical products industries—in which the 1966 increase exceeded 0.1 p.c., had percentage increases in total employees above the average annual rate for the 1961-66 period. These relationships are summarized in Table 2.

EMPLOYMENT IN THE MANUFACTURING INDUSTRIES, 1946-66



2.—Percentage Changes in Total Employees, 1961-66

(Industry groups ranked by average growth rate)

Rank	Industry Group	Year-to-Year Percentage Change					Average Annual Percentage Change
		1961-62	1962-63	1963-64	1964-65	1965-66	
1	Machinery industries.....	7.5	8.2	8.5	10.6	6.7	8.5
2	Transportation equipment industries.....	5.7	6.6	10.7	9.5	8.5	8.4
3	Metal fabricating industries.....	8.4	3.4	6.8	10.7	7.0	7.1
4	Electrical products industries.....	8.1	4.8	4.1	7.6	9.7	6.4
5	Furniture and fixture industries.....	2.6	4.5	5.8	6.3	8.0	5.5
6	Primary metal industries.....	2.0	2.6	6.7	7.1	5.7	5.0
7	Miscellaneous manufacturing industries.....	3.0	3.6	5.4	5.1	7.8	4.9
8	Rubber industries.....	4.4	6.0	3.4	4.9	6.2	4.9
9	Non-metallic mineral products industries.....	5.0	1.3	5.3	5.6	3.8	4.2
10	Textile industries.....	4.5	3.5	5.9	3.0	0.7	3.7
11	Paper and allied industries.....	1.8	1.5	4.7	3.6	6.0	3.5
12	Chemical and chemical products industries.....	0.9	2.5	3.0	5.3	3.3	3.1
13	Wood industries.....	1.7	4.1	2.9	2.4	0.4	2.5
14	Printing, publishing and allied industries.....	-0.9	0.8	0.4	4.4	4.1	1.7
15	Clothing industries.....	-1.8	0.7	4.4	2.3	1.1	1.7
16	Food and beverage industries.....	-0.2	-0.1	2.3	2.7	3.0	1.6
17	Knitting mills.....	0.6	-1.1	1.8	4.8	-1.9	1.6
18	Leather industries.....	-1.0	-0.9	-0.7	0.6	—	-0.4
19	Tobacco products industries.....	7.2	-1.1	-1.3	-5.7	-0.7	-1.0
20	Petroleum and coal products industries.....	-0.7	-5.4	-2.5	-4.5	7.5	-2.0
	All Industries.....	2.7	2.6	4.6	5.3	4.8	4.1

3.—Industries Showing Increases of 800 or More Employees in 1966

(Ranked by numerical increase)

Rank	Industry	Total Employees		Numerical Increase, 1965-66		Relative Increase, 1965-66
		1965	1966	Actual	Proportion Over-all Increase	
		No.	No.	No.	p.c.	p.c.
1	Aircraft and parts manufacturers.....	27,738	33,883	6,145	8.1	22.2
2	Communications equipment manufacturers.....	33,481	38,477	4,996	6.6	14.9
3	Pulp and paper mills.....	69,897	73,501	3,604	4.8	5.2
4	Miscellaneous machinery and equipment manufacturers.....	43,956	47,281	3,325	4.4	7.6
5	Fabricated structural metal industry.....	18,072	21,038	2,966	3.9	16.4
6	Motor vehicle parts and accessories manufacturers..	31,982	34,759	2,777	3.7	8.7
7	Manufacturers of electrical industrial equipment....	21,739	24,272	2,533	3.3	11.7
8	Commercial printing.....	35,264	37,269	2,005	2.6	5.7
9	Plastics fabricators, n.e.s.....	11,617	13,548	1,931	2.6	16.6
10	Other paper converters.....	12,215	14,106	1,891	2.5	15.5
11	Household furniture industry.....	22,589	24,446	1,857	2.5	8.2
12	Iron and steel mills.....	44,274	45,999	1,725	2.3	3.9
13	Metal stamping, pressing and coating industry.....	27,925	29,577	1,652	2.2	5.9
14	Machine shops.....	11,618	13,235	1,617	2.1	13.9
15	Miscellaneous metal fabricating industries.....	20,017	21,431	1,414	1.9	7.1
16	Smelting and refining.....	31,835	33,237	1,402	1.9	4.4
17	Iron foundries.....	11,714	13,027	1,313	1.7	11.2
18	Manufacturers of electric wire and cable.....	7,864	9,111	1,247	1.6	15.9
19	Other rubber industries.....	10,285	11,465	1,180	1.6	11.5
20	Fish products industry.....	17,163	18,304	1,141	1.5	6.6
21	Bakeries.....	33,082	34,092	1,010	1.3	3.1
22	Sash, door and other millwork plants.....	12,553	13,529	976	1.3	7.8
23	Fruit and vegetable canners and preservers.....	19,645	20,558	913	1.2	4.6
24	Instrument and related products manufacturers.....	11,216	12,124	908	1.2	8.1
25	Shipbuilding and repair.....	18,586	19,492	906	1.2	4.9
26	Automobile fabric accessory manufacturers.....	1,877	2,746	869	1.1	46.3

Subsection 2.—Developments Since 1966

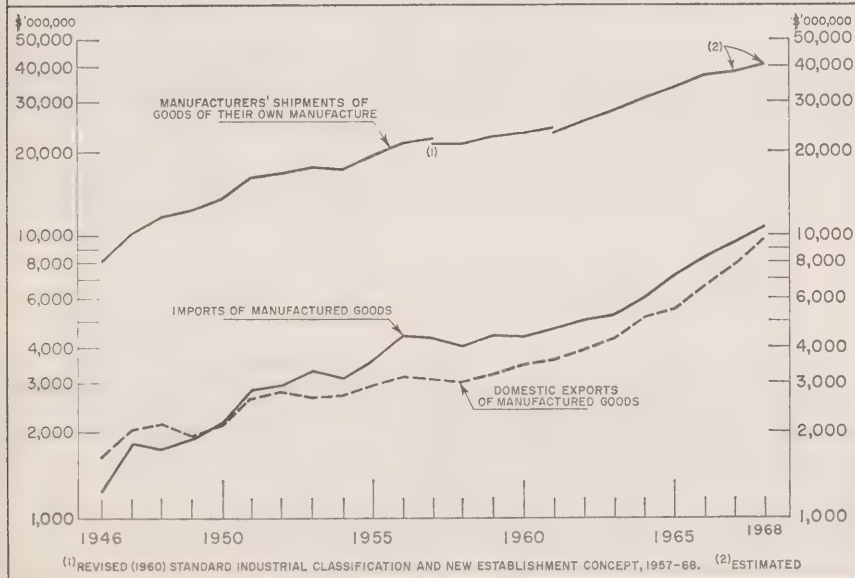
Although 1966 was, at the time of writing, the latest year for which results from the annual Census of Manufactures were complete, certain preliminary data for 1967 and 1968, compiled from monthly surveys of the manufacturing industries, were available. Tables 4 and 5 show the value of shipments of goods of own manufacture, by province and by industry group, for those two years, with annual census data for earlier years included for comparison.* Preliminary figures indicate that the value of such shipments rose by 5.5 p.c. in 1968.

*DBS publication, *Inventories, Shipments and Orders in the Manufacturing Industries* (Catalogue No. 31-001).

4.—Value of Shipments of Goods of Own Manufacture, by Province, 1961 and 1965-68, with Percentage Change, 1967-68

Province or Territory	1961	1965	1966	1967 ^p	1968 ^p	Change, 1967-68 ^p
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p.c.
Newfoundland.....	135.9	174.5	194.1	176.9	168.0	-5.0
Prince Edward Island.....	30.6	43.1	46.8	..	..	..
Nova Scotia.....	381.4	563.2	612.5	606.8	649.8	+7.1
New Brunswick.....	390.6	512.7	547.2	547.1	569.4	+4.1
Quebec.....	7,022.2	9,492.2	10,464.5	10,945.6	11,334.0	+3.5
Ontario.....	11,563.7	17,675.9	19,452.6	19,997.6	21,274.2	+6.4
Manitoba.....	716.7	913.4	1,019.0	1,052.2	1,090.1	+3.6
Saskatchewan.....	331.9	421.5	470.4	469.6	476.8	+1.5
Alberta.....	935.5	1,283.3	1,429.0	1,483.9	1,527.2	+2.9
British Columbia.....	1,927.0	2,806.2	3,063.7	3,201.9	3,512.3	+9.7
Yukon and Northwest Territories...	3.4	3.6	3.7	..	..	..
Canada.....	23,439.0	33,889.4	37,303.5	38,533.4	40,648.7	+5.5

SHIPMENTS, EXPORTS AND IMPORTS OF MANUFACTURED GOODS, 1946-68



**5.—Value of Shipments of Goods of Own Manufacture, by Industry Group,
1961 and 1965-68 with Percentage Change, 1967-68**

Industry Group	1961	1965	1966	1967 ^a	1968 ^a	Change 1967-68 ^a
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p.c.
Food and beverage industries.....	5,039.5	6,428.8	7,062.0	7,448.1	7,598.8	+ 2.0
Tobacco products industries.....	334.9	379.8	429.8	509.2	513.2	+ 0.8
Rubber industries.....	331.1	474.5	540.5	563.8	577.6	+ 2.4
Leather industries.....	291.2	343.1	370.9	398.3	425.0	+ 6.7
Textile industries.....	874.5	1,276.7	1,346.9	1,369.3	1,482.7	+ 8.3
Knitting mills.....	219.4	308.9	320.9	323.0	350.8	+ 8.6
Clothing industries.....	802.7	1,063.4	1,152.6	1,092.1	1,115.4	+ 2.1
Wood industries.....	1,036.2	1,487.6	1,592.8	1,667.0	1,869.9	+12.2
Furniture and fixture industries.....	359.6	525.2	602.7	603.8	594.0	- 1.6
Paper and allied industries.....	2,203.5	2,882.0	3,165.7	3,251.0	3,358.8	+ 3.3
Printing, publishing and allied industries.....	854.8	1,085.2	1,204.7	1,255.8	1,287.9	+ 2.6
Primary metal industries.....	1,937.0	2,854.0	3,085.1	2,985.4	3,278.3	+ 9.8
Metal fabricating industries.....	1,510.6	2,466.8	2,763.7	2,762.0	2,821.6	+ 2.2
Machinery industries.....	658.3	1,235.4	1,464.2	1,433.7	1,456.6	+ 1.6
Transportation equipment industries	1,845.8	3,865.0	4,238.4	4,736.2	5,332.7	+12.6
Electrical products industries.....	1,208.3	1,902.5	2,186.6	2,211.9	2,301.9	+ 4.1
Non-metallic mineral products industries.....	676.0	1,038.0	1,121.4	1,051.3	1,147.0	+ 9.1
Petroleum and coal products industries.....	1,219.2	1,430.6	1,495.3	1,561.6	1,666.3	+ 6.7
Chemical and chemical products industries.....	1,435.8	1,973.3	2,174.2	2,238.8	2,339.7	+ 4.5
Miscellaneous manufacturing industries.....	600.5	868.7	985.0	1,070.9	1,130.6	+ 5.6
All Industries.....	23,439.0	33,889.4	37,303.5	38,533.4	40,648.7	+ 5.5

A nominal increase in total employees in the manufacturing industries in 1968 is indicated by estimates based on monthly surveys made by the Labour Division of DBS.* The figures are broken down only between durable and non-durable manufacturing industries and are as follows:—

Item	1967	1968	P.C. Change 1967-68
	'000	'000	
Durables.....	794.6	783.7	-1.4
Non-durables.....	829.5	845.6	+1.9
ALL MANUFACTURING INDUSTRIES.....	1,624.1	1,629.2	+0.3

Indexes of industrial production by industry group, that is, measures of the growth of the physical volume of output of these industries, are compiled by the National Accounts, Production and Productivity Division of DBS. They have recently been converted to the revised (1960) standard industrial classification and calculated with a 1960 weight and reference base.† Data for 1961-68 are shown in Table 6, and indicate that the physical output of the manufacturing industries increased by 4.6 p.c. in 1968 over 1967, compared with an increase of only 0.3 p.c. in 1967 over 1966 and an average growth rate of 7.6 p.c. a year for the 1961-67 period and of 5.1 p.c. a year for the 1946-67 period.

* DBS publication, *Estimates of Employees by Province and Industry* (Catalogue No. 72-008).

† DBS publication, *Index of Industrial Production* (Catalogue No. 61-005).

6.—Indexes of Volume of Manufacturing Production for Major Industry Groups, 1962-68

(1961=100)

Industry Group	1962	1963	1964	1965	1966	1967	1968 ^a
Non-durable Manufacturing	110.5	118.0	129.2	141.0	151.2	151.7	158.7
Food and beverage industries.....	107.3	112.9	118.8	124.3	129.9	134.9	140.3
Tobacco products industries.....	102.8	105.3	107.0	114.6	119.5	120.3	118.7
Rubber industries.....	121.2	126.3	143.8	147.4	153.0	144.1	137.3
Leather industries.....	103.7	105.4	109.2	109.3	110.9	104.5	111.2
Textile industries.....	112.2	123.1	135.8	147.7	155.0	158.0	175.9
Knitting mills.....	104.2	112.7	124.9	135.6	138.1	130.8	136.8
Clothing industries.....	105.7	111.5	119.8	124.4	127.8	122.9	122.7
Paper and allied industries.....	102.6	106.8	115.6	120.2	129.8	129.8	136.7
Printing, publishing and allied industries.....	102.9	106.6	111.6	122.3	128.3	133.6	138.0
Petroleum and coal products industries.....	106.3	113.7	117.7	123.3	131.5	135.0	143.2
Chemical and chemical products industries.....	109.9	116.3	129.3	141.0	154.1	156.0	164.6
Miscellaneous manufacturing industries.....	113.5	117.3	128.1	141.9	150.5	153.8	161.9
Durable Manufacturing	114.8	124.7	139.4	156.3	170.0	168.9	176.8
Wood industries.....	118.7	122.8	129.8	133.8	137.5	136.6	144.1
Furniture and fixture industries.....	108.4	117.8	132.1	142.8	155.9	155.4	157.8
Primary metal industries.....	104.9	110.6	122.9	136.2	138.6	138.3	153.0
Metal fabricating industries (except machinery and transportation equipment industries).....	114.7	123.8	138.9	157.7	174.3	161.5	162.3
Machinery industries (except electrical machinery).....	119.9	132.6	155.8	176.5	202.0	205.3	198.7
Transportation equipment industries.....	119.4	140.3	158.3	187.7	206.9	217.5	235.7
Electrical products industries.....	120.1	129.4	144.5	162.3	184.9	182.0	189.5
Non-metallic mineral products industries.....	112.8	115.9	127.5	135.9	143.1	135.9	137.7
All Manufacturing Industries	110.5	118.0	129.2	141.0	151.2	151.7	158.7

Subsection 3.—Exports of Manufactured Goods

Exports of manufactured goods in 1966 were apparently equal to about 18 p.c. of the value of shipments of goods of own manufacture by the manufacturing industries in that year. The proportion in 1967 was 20 p.c. and in 1968, 24 p.c., using preliminary estimates of total manufacturers' shipments. Manufacturers do not regularly report shipments on the basis of their destination but it is believed that the domestic exports of fabricated materials and of end products together approximate total exports of Canadian manufactures. Exports of end products approximate exports of finished manufactured goods, although the classification includes a very small amount of non-manufactured goods. The following statement shows exports of fabricated materials and end products compared with total shipments of manufacturers in 1961 and 1965-68 (some figures do not add due to rounding):—

<i>Item</i>	<i>1961</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>	<i>1968</i>
	(\$'000,000)				
Domestic Exports of—					
Fabricated materials.....	2,916.4	3,923.5	4,217.0	4,417.3	5,027.9
End products.....	706.4	1,606.3	2,455.1	3,487.4	4,649.6
Manufactured Goods (approx.).....	3,622.9	5,529.8	6,672.1	7,884.7	9,677.5
Shipments of goods of own manufacture.....	23,439.0	33,889.4	37,303.5	38,533.4	40,661.2

The marked rise in the apparent relative importance of manufactures in Canada's exports has been influenced by the recent sharp increase in exports of automotive products under the Canada-United States Agreement on Automotive Products and by an upward trend, beginning earlier, in exports of a variety of highly manufactured goods.

Section 2.—Input and Profit Ratios

Statistics on the manufacturing industries are collected on an establishment basis for some purposes and on a company basis for other purposes. An establishment is a reporting or accounting unit corresponding roughly to the popular conception of a plant or mill. A company may own a number of establishments in a variety of industries—for example, some engaged in mining and others in manufacturing.

Table 7 shows the ratio to gross output of various input items as compiled from the annual Census of Manufactures. These ratios relate to establishments and exclude the activity of any establishments that the same companies may own in other industries. On the other hand, the profit ratios shown in Table 8 relate to companies and include all establishments of the companies involved regardless of what the principal activity of a particular establishment might be;* for instance, the mining, merchandising or other non-manufacturing establishments of a company mainly engaged in manufacturing would be included. For this reason and certain technical considerations, the profit ratios are not comparable with the wage and other ratios in the establishment table. (See the 1968 Canada Year Book, Chapter XVI, Sect. 1 on "Technology, Markets and Costs in Manufacturing", pp. 689-694.)

* DBS publication, *Corporation Profits* (Catalogue No. 61-003).

7.—Analysis of Gross Output (Total Activity), by Industry Group, 1966

(Ranked according to value added expressed as percentage of gross output)

NOTE.—Gross output (total activity) can be calculated for any industry by adding cost of fuel and electricity, total cost of materials, supplies and goods for resale and value added (total activity).

Rank	Industry Group	Cost of Materials, Supplies and Goods for Resale	Cost of Fuel and Electricity	Value Added, Total Activity					Total
				Wages and Salaries			Other	Total Value Added	
				Wages	Salaries	Total			
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1	Printing, publishing and allied industries.....	34.4	0.6	19.9	16.8	36.7	28.2	64.9	100.0
2	Non-metallic mineral products industries.....	42.2	5.3	16.3	7.0	23.3	29.1	52.4	100.0
3	Miscellaneous manufacturing industries.....	47.8	0.8	16.6	10.6	27.3	24.1	51.4	100.0
4	Furniture and fixture industries	49.0	0.9	22.0	7.8	29.8	20.3	50.1	100.0
5	Machinery industries (except electrical machinery).....	51.6	0.5	13.3	10.2	23.5	24.3	47.8	100.0
6	Rubber industries.....	51.3	1.2	15.2	8.4	23.6	23.9	47.5	100.0
7	Metal fabricating industries (except machinery and transportation equipment industries..	52.0	1.0	18.0	7.9	25.9	21.2	47.1	100.0
8	Leather industries.....	52.4	0.7	23.1	7.0	30.1	16.8	46.9	100.0
9	Chemical and chemical products industries.....	50.2	3.1	7.5	9.9	17.4	29.3	46.7	100.0
10	Clothing industries.....	54.0	0.3	21.6	7.0	28.5	17.1	45.7	100.0
11	Electrical products industries...	55.0	0.6	13.3	11.2	24.5	19.9	44.4	100.0
12	Paper and allied industries.....	50.9	5.1	15.3	6.3	21.6	22.3	44.0	100.0
13	Knitting mills.....	55.9	0.7	18.8	6.2	25.0	18.4	43.4	100.0
14	Wood industries.....	56.7	1.8	20.4	4.7	25.1	16.4	41.5	100.0
15	Primary metal industries.....	55.3	3.7	15.0	5.7	20.7	20.2	40.9	100.0
16	Textile industries.....	58.7	1.4	15.7	7.6	23.3	16.6	39.9	100.0
17	Tobacco products industries.....	61.0	0.3	8.4	3.7	12.1	26.6	38.7	100.0
18	Transportation equipment industries.....	64.6	0.6	12.6	5.7	18.4	16.4	34.8	100.0
19	Food and beverage industries..	67.3	1.2	7.3	6.1	13.4	18.2	31.5	100.0
20	Petroleum and coal products industries.....	81.4	0.8	3.1	4.4	7.5	10.3	17.8	100.0
	All Industries.....	57.4	1.7	13.2	7.4	20.6	20.3	40.9	100.0

8.—Net Profits Before Taxes, 1963-68, and Related Data, 1967 and 1968, as Percentage of Sales of Corporations Classified to the Manufacturing Industries

Industry Group	Net Earnings		Capital Cost Allowances		Net Profits Before Taxes					
	1967	1968	1967	1968	1963	1964	1965	1966	1967	1968
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Food and beverage industries.....	7.2	7.6	2.0	1.9	5.4	5.6	5.8	5.4	5.2	5.7
Rubber industries.....	10.3	10.5	4.6	4.8	4.8	5.2	5.3	4.9	5.7	5.8
Textile industries.....	5.3	5.3	3.1	2.2	4.1	3.6	3.4	2.4	2.2	3.1
Wood industries.....	9.0	11.8	4.7	3.9	6.8	6.8	5.6	5.2	4.3	7.9
Paper and allied industries.....	12.4	11.7	7.5	6.0	11.1	11.0	8.9	6.1	5.0	5.8
Printing, publishing and allied industries.....	11.5	11.9	3.3	3.2	6.3	7.6	7.8	7.4	8.2	8.6
Primary metal industries.....	13.8	15.0	8.0	4.7	7.6	7.2	8.4	6.6	5.8	10.3
Metal fabricating industries.....	7.5	7.4	2.4	2.3	4.9	5.4	5.6	5.3	5.1	5.1
Machinery industries.....	10.8	11.9	3.8	4.6	9.1	9.1	8.3	8.2	7.0	7.3
Transportation equipment industries.....	6.2	5.9	2.4	2.4	8.7	6.3	5.2	3.7	3.7	3.5
Electrical products industries.....	6.6	6.4	3.6	3.1	4.1	4.9	5.0	4.4	3.0	3.3
Non-metallic mineral products industries.....	10.3	11.0	5.9	4.9	7.8	7.9	8.4	7.5	4.4	6.1
Petroleum and coal products industries.....	9.2	9.1	4.0	4.5	4.2	4.4	4.6	5.2	5.2	4.6
Chemical and chemical products industries.....	12.8	13.5	5.2	5.0	9.2	9.5	9.1	8.7	7.6	8.5
Other manufacturing industries.....	8.4	8.3	2.5	2.4	5.0	5.1	5.6	6.5	5.9	5.9
All Industries.....	8.8	9.1	3.8	3.4	6.6	6.5	6.3	5.6	5.0	5.7

Section 3.—Statistical Data for the Manufacturing Industries

Subsection 1.—Major Historical and Current Statistics of Manufacturing

Statistics on manufacturing in Canada have been collected since 1870, originally in connection with the decennial or quinquennial censuses for the period 1870 to 1915 and, since 1917, through the annual Census of Manufactures. Although every effort has been made to maintain comparability in the statistics since 1917, as shown in Table 9, changes in coverage of industries, type of data collected and the method of its treatment have inevitably introduced discontinuities or lack of comparability in certain components. One such major change in concept occurred in 1952 when the gross value of products was replaced by the value of factory shipments. More recently, the introduction of the revised standard industrial classification in 1960 and the new establishment concept in 1961 led to a break in continuity with previous years. An indication of the effects of these revisions in classification and concept is given in Table 9 where statistics for the 1957-59 period are given on both the 1948 standard industrial classification and manufacturing activity concept and the revised (1960) standard industrial classification and new establishment concept. Under the latter concept, a manufacturing establishment (i.e., one whose major activity is manufacturing) is the smallest reporting unit capable of reporting all of the following: materials and supplies used, goods purchased for resale as such, fuel and power consumed, number of employees and their pay, inventories, and shipments or sales.

The introduction of the total activity concept in 1962 and its application to 1961 data produced a considerable amount of data on non-manufacturing activities of manufacturing industries and has resulted in the transfer of statistics on some items, such as office and administrative workers and working owners and partners, from manufacturing to total activity. Table 10 sets out summary statistics for manufacturing activity and total activity for 1961-66. It should be noted that the 1961 data in Table 10 are not directly comparable with those for the same year in Table 9.

9.—Summary Statistics of Manufactures, 1917-61

NOTE.—Figures for intervening years from 1918 to 1949, not included in this table, are given in the 1962 Year Book, p. 616. Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a basis comparable to the series given below; statistics for significant years appear in the 1943-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

Year	Estab- lish- ments	Employees ¹	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ²	Value of Shipments of Goods of Own Manufacture ³
BASIS: INDUSTRIAL CLASSIFICATION IN USE PRIOR TO 1960						
	No.	No.	\$'000	\$'000	\$'000	\$'000
1917.....	21,845	606,523	497,802	1,539,679	1,281,132	2,820,811
1920.....	22,532	598,893	717,494	2,085,272	1,621,273	3,706,545
1925.....	20,981	522,924	569,944	1,571,788	1,167,037	2,816,865
1930 ⁴	22,618	614,696	697,555	1,664,788	1,522,737	3,280,237
1935 ⁴	24,034	556,664	559,468	1,419,146	1,153,485	2,653,911
1940.....	25,513	762,244	920,873	2,449,722	1,942,471	4,529,173
1945.....	29,050	1,119,372	1,845,773	4,473,669	3,564,316	8,250,369
1950 ⁵	35,942	1,183,297	2,771,267	7,538,535	5,942,058	13,817,526
1951.....	37,021	1,258,375	3,276,281	9,074,526	6,940,947	16,392,187
1952.....	37,929	1,288,382	3,637,620	9,146,172	7,443,533	16,982,687
1953.....	38,107	1,327,451	3,957,018	9,380,559	7,993,069	17,785,417
1954.....	38,028	1,267,966	3,896,688	9,241,858	7,902,124	17,554,528
1955.....	38,182	1,298,461	4,142,410	10,338,202	8,753,450	19,513,934
1956.....	37,428	1,353,020	4,570,692	11,721,537	9,605,425	21,636,749
1957.....	37,875	1,359,061	4,819,628	11,900,762	9,822,085	22,183,594
1958.....	36,741	1,289,602	4,802,496	11,821,567	9,454,955	22,163,186
1959.....	36,193	1,303,956	5,073,074	12,552,201	10,320,963	23,311,601
BASIS: REVISED STANDARD INDUSTRIAL CLASSIFICATION AND NEW ESTABLISHMENT CONCEPT						
	No.	No.	\$'000	\$'000	\$'000	\$'000
1957.....	33,551	1,340,948	4,778,040	11,698,789	..	21,452,343
1958.....	32,446	1,272,686	4,758,614	11,630,825	9,454,954	21,434,815
1959.....	32,075	1,287,809	5,030,128	12,339,558	10,154,277	22,830,827
1960.....	32,852	1,275,476	5,150,503	12,451,637	10,371,284	23,279,804
1961.....	32,415	1,264,946	5,231,447	13,127,708	10,682,138	24,243,295

¹ Includes working owners and partners.

² For 1924-51, inclusive, the value added by manufacture is computed by subtracting cost of fuel, electricity and materials from gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. Figures prior to 1924 are not comparable because statistics for cost of electricity are not available.

³ Prior to 1952, gross value of products.

⁴ A change in the method of computing the number of employees in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in force prior to 1925 was re-adopted.

⁵ Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included.

10.—Summary Statistics of Manufactures, 1961-66

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts. Figures in this table include poultry processors, book publishers, electroplating establishments, dental laboratories, and prescription branches in the ophthalmic goods manufactures industry, not included in Table 9.

Year	MANUFACTURING ACTIVITY ¹							
	Estab- lish- ments	Production and Related Workers			Cost of Fuel and Elec- tricity ²	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manu- facture	Value Added
		Number	Man- Hours Paid	Wages				
	No.		'000	\$'000	\$'000	\$'000	\$'000	\$'000
1961.....	33,357	939,413	1,968,163	3,532,943	516,409	12,579,798	23,438,956	10,434,832
1962.....	33,414	974,376	2,071,376	3,834,514	540,447	13,974,877	25,790,087	11,429,644
1963.....	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734
1964.....	33,630	1,057,502	2,265,188	4,513,633	615,108	16,928,476	30,856,099	13,535,991
1965.....	33,310	1,115,892	2,384,002	5,012,345	675,641	18,622,213	33,889,425	14,927,764
1966.....	33,377	1,172,943	2,498,012	5,575,206	731,726	20,642,695	37,303,455	16,351,740
TOTAL ACTIVITY								
	Estab- lish- ments	Working Owners and Partners ³		Total Employees ⁴		Total Cost of Materials and Supplies Used and Goods Purchased for Resale ⁵	Total Operational Revenue ⁶	Total Value Added ⁷
		Number	With- drawals	Number	Salaries and Wages			
	No.					\$'000	\$'000	\$'000
1961.....	33,357	16,989	57,980	1,352,605	5,701,651	14,564,247	25,895,611	10,931,561
1962.....	33,414	17,228	60,744	1,389,516	6,096,174	16,118,144	28,473,319	11,986,666
1963.....	33,119	16,030	59,426	1,425,440	6,495,289	17,558,196	30,823,107	12,875,073
1964.....	33,630	15,747	60,098	1,491,257	7,080,939	19,467,899	34,071,582	14,247,184
1965.....	33,310	14,620	59,457	1,570,299	7,822,925	21,563,010	37,638,412	15,785,311
1966.....	33,377	13,894	60,076	1,646,024	8,695,890	24,195,610	41,722,527	17,260,256

¹ Conceptually identical to previous years.

² Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.

³ Included with administrative and office employees in Table 9.

⁴ Includes production and related workers, administrative and office employees, sales, distribution and other employees; excludes working owners and partners.

⁵ Includes supplies used in both manufacturing and non-manufacturing activity.

⁶ Includes shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenue.

⁷ Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for resale in the same condition; all adjusted for inventory changes where required.

11.—Summary Statistics of Manufactures, by Industry Group, 1965 and 1966

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts.

Industry Group and Year	Estab-lish-ments	MANUFACTURING ACTIVITY					Total Activity		
		Production and Related Workers			Value of Ship-ments of Goods and of Own Manu-facture	Total Employees	Total Value Added		
		Number	Man-Hours Paid	Wages					
No.			'000	\$'000	Cost of Fuel and Electricity	Cost of Materials and Supplies Used	Value Added	Number	\$'000
Food and beverage industries.....	1965 1966	135,110 149,721	287,942 288,232	522,768 575,140	87,881 91,832	4,182,451 4,633,377	5,428,799 7,601,996	220,700 227,221	\$'000 971,700
Tobacco products industries.....	1965 1966	6,045 7,880	15,236 18,249	35,333 38,323	1,430 1,430	4,633,377 5,428,799	2,850,001 379,712	56,469 50,486	2,285,474 2,495,537
Rubber industries.....	1965 1966	34 18,185	7,819 38,593	85,333 85,333	6,700 2,533	424,846 540,389	169,876 474,846	10,453 20,306	186,894 236,967
Leather industries.....	1965 1966	104 28,083	19,579 57,728	84,870 84,870	7,523 2,587	424,846 540,389	169,876 474,846	10,453 20,306	186,894 236,967
Textile industries.....	1965 1966	54 60,547	57,208 130,255	84,870 217,052	2,587 16,348	424,846 540,389	169,876 474,846	20,306 72,858	236,967 1,094,806
Knitting mills.....	1965 1966	980 361	20,542 44,501	90,322 199,700	5,587 2,329	700,835 808,800	370,910 138,870	32,885 27,248	1,094,806 788,612
Clothing industries.....	1965 1966	347 4,315	20,493 188,026	61,948 240,286	2,401 3,584	179,281 572,833	308,800 1,093,401	24,070 98,659	788,612 317,760
Wood industries.....	1965 1966	2,333 4,206	86,177 78,389	255,626 322,232	3,853 29,564	617,003 818,177	1,152,575 1,487,600	98,708 91,589	342,034 398,980
Furniture and fixture industries.....	1965 1966	3,919 2,262	79,159 32,702	348,294 120,506	30,737 5,248	879,931 285,614	592,707 1,595,213	91,937 43,508	499,116 180,781
Paper and allied industries.....	1965 1966	2,282 601	35,735 83,994	177,178 450,434	5,626 158,338	288,113 1,385,512	692,711 3,185,684	43,508 116,840	180,781 727,123
Printing, publishing and allied industries.....	1965 1966	623 3,465	184,072 88,414	450,434 514,675	171,482 7,560	1,589,415 346,677	1,754,583 1,085,299	78,737 81,946	422,225 483,662
Primary metal industries.....	1965 1966	3,407 8,401	46,837 83,443	251,918 478,482	8,199 119,893	394,917 4,346,349	1,204,664 2,854,069	91,946 107,504	820,512 1,366,612
Metal fabricating industries (except machinery and transportation equipment industries).....	1965 1966	408 3,581	87,748 99,839	518,347 478,655	128,229 29,457	1,593,497 1,370,407	3,085,130 2,466,881	113,645 133,902	716,557 691,525
Machinery industries (except electrical machinery).....	1965 1966	3,581 3,811	214,375 107,187	478,655 582,362	29,457 9,282	1,370,407 447,041	2,466,881 984,196	133,902 143,311	691,525 794,770
Transportation equipment industries.....	1965 1966	684 726	43,007 46,839	224,124 288,016	9,282 26,081	648,831 1,370,407	1,235,388 3,882,764	70,683 75,451	802,204 455,083
Electrical products industries.....	1965 1966	805 595	99,705 219,367	576,180 635,866	26,081 29,791	1,370,407 3,637,656	1,235,388 4,238,414	135,481 146,932	455,083 922,729
Non-metallic mineral products industries.....	1965 1966	639 1,351	99,705 38,246	312,667 188,351	14,939 62,425	999,754 1,403,149	1,902,539 2,186,554	146,932 124,498	584,665 670,340
Petroleum and coal products industries.....	1965 1966	1,370 90	39,561 6,825	363,433 43,387	15,886 12,576	1,403,149 1,235,388	2,186,554 1,235,388	124,498 53,189	670,340 264,931
Chemical and chemical products industries.....	1965 1966	89 1,118	15,053 35,057	43,387 73,350	12,576 13,399	1,235,388 1,403,149	1,235,388 1,403,149	53,189 15,403	264,931 102,825
Miscellaneous manufacturing industries.....	1965 1966	1,152 2,766	37,125 48,728	105,042 187,486	80,559 9,822	888,211 447,041	1,973,308 984,196	70,683 67,534	888,211 316,473
Totals.....	1965 1966	33,310 33,377	2,384,002 1,172,943	5,012,345 5,575,206	675,641 731,726	18,622,213 20,645,337	33,859,425 37,303,455	1,570,289 1,616,091	15,783,311 17,361,740

12.—Summary Statistics of the Forty Leading Industries, 1966

(Ranked according to value of shipments of goods of own manufacture)

Rank	Industry	Estab-lish-ments	MANUFACTURING ACTIVITY						TOTAL ACTIVITY			
			Production and Related Workers			Cost of Fuel and Elec- tricity	Cost of Materials and Supplies Used	Value of Ship- ments of Goods of Own Man- ufacture	Total Employees		Total Value Added	
			Number	Man- Hours Paid	Wages				Number	Salaries and Wages		
No.	'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000			
1	Pulp and paper mills.....	134	60,854	135,053	390,735	163,467	1,043,720	2,297,662	73,501	486,249	1,107,717	
2	Motor vehicle manufacturers.....	19	29,746	65,933	203,452	8,993	1,566,246	2,165,769	42,507	308,952	717,023	
3	Slaughtering and meat packing plants.....	317	19,610	41,433	102,167	8,153	1,270,479	1,529,707	27,041	147,226	266,875	
4	Petroleum refining.....	40	6,219	13,676	43,531	12,079	1,156,200	1,444,821	8,996	69,581	260,439	
5	Iron and steel mills.....	43	37,984	80,205	236,645	49,467	569,019	1,255,392	45,999	299,552	654,451	
6	Dairy factories.....	1,308	13,704	30,175	98,086	20,306	733,346	1,070,972	31,845	147,202	286,796	
7	Miscellaneous machinery and equipment manufacturers.....	557	30,880	67,849	169,327	6,668	464,222	931,574	47,281	275,751	533,963	
8	Sawmills and planing mills.....	2,292	43,242	92,953	196,677	20,198	512,822	917,661	49,057	231,879	394,899	
9	Motor vehicle parts and accessories manu- facturers.....	174	27,928	59,730	155,879	10,688	482,156	860,500	34,759	207,169	384,521	
10	Smelting and refining.....	23	24,563	50,896	145,402	62,829	347,280	826,167	33,237	209,528	483,868	
11	Manufacturers of industrial chemicals.....	138	12,573	27,368	79,276	63,296	315,861	770,021	19,586	132,153	416,463	
12	Metal stamping, pressing and coating in- dustry.....	694	22,770	48,936	112,957	7,499	378,744	687,502	29,577	160,231	319,685	
13	Miscellaneous food manufacturers.....	269	8,529	18,095	36,063	6,260	333,109	592,160	13,664	69,610	244,562	
14	Commercial printing.....	2,026	26,536	54,812	133,797	3,875	220,028	550,957	37,269	207,075	339,706	
15	Aircraft and parts manufacturers.....	84	21,867	48,015	126,297	3,600	243,885	533,345	33,883	211,543	304,618	
16	Communications equipment manufacturers.....	168	25,641	54,242	117,910	2,614	212,540	506,878	325,440	38,477	203,404	
17	Printing and publishing.....	691	15,510	31,088	89,975	3,741	118,300	481,443	33,876	183,136	350,149	
18	Food and kindred product manufacturers.....	314	15,711	32,383	52,685	5,999	283,472	470,298	20,558	81,379	200,311	
19	Fruit and vegetable canners and preservers.....	6,011	11,378	20,917	6,516	369,513	463,850	94,075	8,869	40,310	113,844	
20	Feed manufacturers.....	860	5,011	11,378	20,917	6,516	369,513	463,850	34,092	141,419	247,541	
21	Bakeries.....	2,363	18,766	40,226	72,205	12,172	213,655	468,422	23,726	133,175	242,074	
22	Fabricated structural metal industry.....	107	15,856	33,189	97,056	2,916	208,950	440,833	21,038	133,175	242,074	
	Manufacturers of electrical industrial equip- ment.....	140	15,949	34,428	83,089	3,315	180,999	429,786	24,272	139,107	261,506	
23	Women's clothing factories.....	641	26,198	51,826	110,456	1,026	236,485	426,484	30,656	190,757	384,521	
24	Men's clothing factories.....	493	30,275	60,043	91,105	1,405	231,157	409,958	34,842	120,282	185,832	
25	Miscellaneous metal fabricating industries.....	436	16,259	34,236	78,208	6,153	198,470	401,972	21,431	111,422	213,581	

Value of production, rather than shipments of goods of own manufacture, is shown.

12.—Summary Statistics of the Forty Leading Industries, 1966—concluded

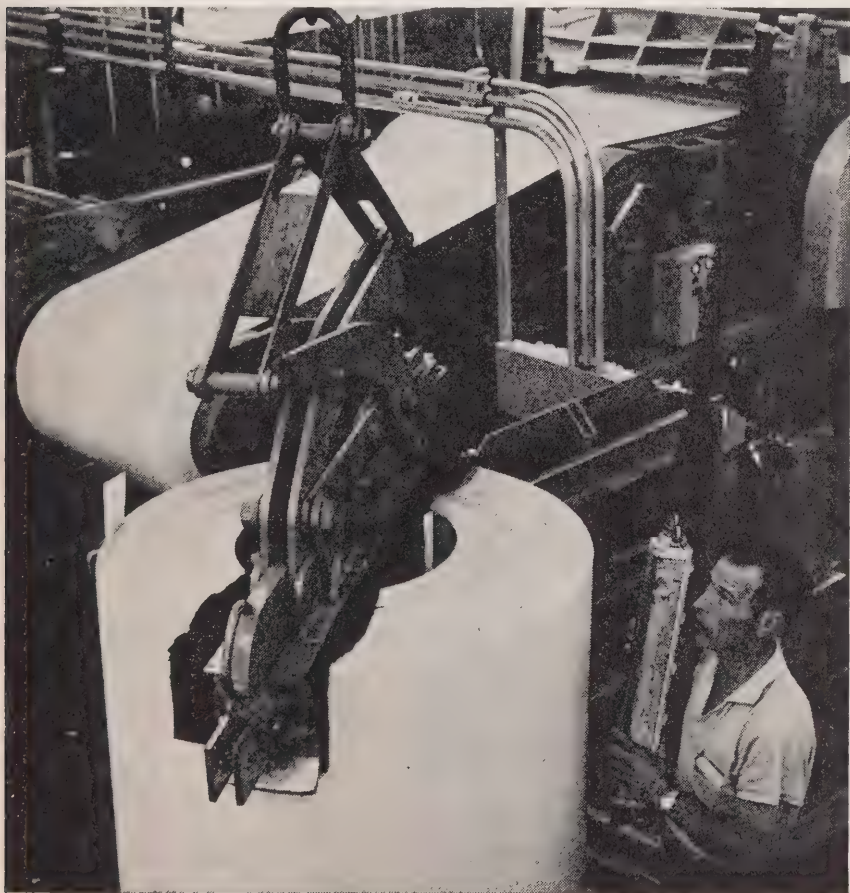
Rank	Industry	Estab-lish-ments	MANUFACTURING ACTIVITY										TOTAL ACTIVITY		
			Production and Related Workers			Cost of Fuel and Elec- tricity	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu- facture	Value Added	Total Employees		Total Value Added			
			Number	Man- Hours Paid	Wages					Number	Salaries and Wages				
		No.	'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000				
26	Synthetic textile mills.....	77	16,065	35,214	66,068	8,061	205,805	387,776	176,242	20,688	94,489	176,306			
27	Wire and wire products manufacturers.....	232	12,503	26,921	64,198	4,287	209,847	371,112	158,614	16,391	90,234	164,319			
28	Manufacturers of electric wire and cable.....	27	6,443	14,317	35,672	2,697	233,368	341,275	117,147	9,111	53,666	121,290			
29	Agricultural implement industry.....	105	11,332	24,248	64,216	3,074	180,199	328,332	140,615	14,498	85,252	150,839			
30	Breweries.....	52	5,023	10,627	31,252	3,962	86,044	321,314	230,569	9,391	64,495	232,880			
31	Household furniture industry.....	1,705	20,736	45,160	79,689	2,914	153,015	320,689	168,581	24,446	103,171	170,008			
32	Tobacco products manufacturers.....	20	6,549	13,162	32,853	1,084	154,802	301,591	150,320	8,683	47,750	151,243			
33	Other paper converters.....	213	9,669	20,612	42,094	3,047	167,648	301,326	136,219	14,106	71,344	149,280			
34	Fish products industry.....	365	15,501	32,504	44,696	4,450	203,073	298,024	98,427	18,304	59,525	104,443			
35	Manufacturers of major appliances (elec- tric and non-electric).....	34	9,701	20,497	46,608	3,190	177,042	295,906	123,821	13,736	72,241	131,348			
36	Shipbuilding and repair.....	72	16,229	35,246	89,660	2,475	125,525	293,829	165,842	19,492	109,848	166,734			
37	Rubber tire and tube manufacturers.....	13	7,436	16,135	44,629	3,863	153,164	288,688	140,125	9,192	55,933	142,745			
38	Copper and alloy rolling, casting and ex- truding.....	57	3,411	7,665	19,895	2,185	224,476	281,958	59,903	4,199	25,663	60,343			
39	Cotton yarn and cloth mills.....	35	13,376	29,451	52,433	4,772	171,540	281,448	114,212	16,399	69,328	116,543			
40	Manufacturers of pharmaceuticals and medi- cines.....	165	4,889	10,075	20,620	1,634	92,914	269,425	181,136	11,649	68,209	189,367			
Totals, Leading Industries.....		17,503	731,194	1,569,032	3,713,773	545,600	14,558,220	25,616,876	10,796,325	1,006,548	5,510,084	11,255,721			
Totals, All Manufacturing In- dustries.....		33,377	1,172,943	2,498,012	5,575,296	731,726	30,642,695	37,303,455	16,351,740	1,646,024	8,635,890	17,260,256			

1 Value of production, rather than shipments of goods of own manufacture, is shown.

Subsection 2.—Distribution of Manufacturing by Province and by Census Metropolitan Area

Distribution by Province

Ontario and Quebec together accounted for 81.7 p.c. of the value added by manufacture in Canada in 1966—Ontario for 52.9 p.c. and Quebec for 28.8 p.c. British Columbia was responsible for 8.2 p.c., the Prairie Provinces for 6.6 p.c., and the Atlantic Provinces for 3.5 p.c. In Ontario, value added by manufacture averaged \$1,242 per capita of the population, in Quebec \$814, in British Columbia \$719, in the Prairie Provinces \$321 and in the Atlantic Provinces \$286; these averages compare with a national average of \$817.



One of the most significant developments in manufacturing technology applies to the coating of metals. Prepainted aluminum coiled sheet, here shown coming off the coating line at a Kingston, Ont., plant, can be stamped and formed without detriment to the coating. It is in growing demand, especially for building and transportation applications.

13.—Summary Statistics of Manufactures, by Province, 1965 and 1966

NOTE.—Based on the revised standard industrial classification and new establishment and total activity concepts.

Province or Territory and Year	Estab- lish- ments	MANUFACTURING ACTIVITY										TOTAL ACTIVITY		
		Production and Related Workers					Cost of Fuel and Elec- tricity		Cost of Materials and Supplies Used		Value of Ship- ments of Goods and Own Manu- facture		Total Employees	
		Man- Hours Paid		Wages		Number	No.	\$ '000	\$ '000	\$ '000	\$ '000	\$ '000	Number	Salaries and Wages
														Total Value and Added
Newfoundland.....	1965 1966	8,577 9,375	18,514 20,677	31,724 38,512	8,701 8,990	84,490 92,576	174,532 194,102	82,407 93,043	10,463 11,484	42,516 50,694	86,543 99,107	10,463 11,484	42,516 50,694	86,543 99,107
Prince Edward Island.....	1965 1966	1,629 1,647	3,374 3,482	4,397 4,804	757 821	30,045 31,517	43,076 46,781	12,724 14,480	2,197 2,164	6,617 7,028	13,885 15,781	2,197 2,164	6,617 7,028	13,885 15,781
Nova Scotia.....	1965 1966	944 26,020	52,870 55,675	91,076 99,603	13,728 14,140	328,887 354,044	563,155 612,466	222,662 246,702	32,100 33,533	127,558 139,626	231,510 255,485	32,100 33,533	127,558 139,626	231,510 255,485
New Brunswick.....	1965 1966	704 690	40,916 42,903	69,321 77,287	21,370 22,761	294,263 316,568	512,705 547,197	196,237 211,295	25,153 25,749	99,771 110,387	205,534 220,012	25,153 25,749	99,771 110,387	205,534 220,012
Quebec.....	1965 1966	10,952 10,877	356,780 368,450	770,167 794,333	1,433,816 1,590,164	199,392 217,693	5,083,140 5,639,982	9,492,182 10,464,530	4,305,379 4,704,799	2,298,750 2,543,539	4,516,700 4,948,941	4,305,379 4,704,799	2,298,750 2,543,539	4,516,700 4,948,941
Ontario.....	1965 1966	12,766 12,986	543,501 578,559	2,615,719 2,912,675	314,290 339,748	9,668,876 10,712,853	17,475,865 19,452,570	7,881,825 8,648,180	774,428 820,387	4,100,212 4,571,681	8,421,721 9,209,568	774,428 820,387	4,100,212 4,571,681	8,421,721 9,209,568
Manitoba.....	1965 1966	1,457 1,456	68,612 72,566	126,036 141,077	18,639 20,017	541,931 606,600	913,357 1,019,000	364,275 402,954	46,368 48,523	199,059 220,051	380,446 416,884	46,368 48,523	199,059 220,051	380,446 416,884
Saskatchewan.....	1965 1966	754 774	10,665 21,109	41,074 46,857	9,255 9,703	275,818 310,533	421,452 470,381	138,692 154,534	14,960 15,689	69,840 77,947	146,543 161,463	14,960 15,689	69,840 77,947	146,543 161,463
Alberta.....	1965 1966	1,774 1,784	30,764 32,506	64,914 68,251	135,689 152,607	22,458 24,277	797,030 892,825	1,283,301 1,429,020	475,343 527,197	217,634 242,988	500,621 549,370	475,343 527,197	217,634 242,988	500,621 549,370
British Columbia.....	1965 1966	3,502 3,444	88,953 92,197	180,880 186,763	462,894 510,326	66,065 73,496	1,515,454 1,682,834	2,806,165 3,063,675	119,836 124,571	660,100 731,013	1,280,166 1,381,175	119,836 124,571	660,100 731,013	1,280,166 1,381,175
Yukon Territory.....	1965 1966	9 11	55 48	107 100	200 245	58 49	297 177	953 717	86 76	350 364	644 658	86 76	350 364	644 658
Northwest Territories.....	1965 1966	6 10	55 63	136 129	398 448	28 31	1,952 2,154	2,684 3,017	76 83	518 570	996 1,211	76 83	518 570	996 1,211
Canada.....	1965 1966	33,310 33,377	2,384,002 2,498,012	5,012,345 5,575,206	675,611 731,796	18,622,213 20,642,695	33,889,425 37,303,455	14,927,764 16,351,740	1,570,299 1,646,024	7,822,925 8,693,890	15,765,311 17,260,256	1,570,299 1,646,024	7,822,925 8,693,890	15,765,311 17,260,256

14. Summary Statistics of Manufactures, by Province and Industry Group, 1966

Province and Industry Group	Estab- lish- ments	MANUFACTURING ACTIVITY						TOTAL ACTIVITY		
		Production and Related Workers			Cost of Fuel and Elec- tricity	Cost of Materials and Supplies Used	Value of Ship ments of Goods and Own Manu- facture	Total Employees		Value Added
		Number	Man- Hours Paid	Wages				Number	Salaries and Wages	
	No.		'000	\$'000	\$'000	\$'000	\$'000		\$'000	\$'000
Newfoundland										
Food and beverage industries.....	94	4,817	10,356	12,166	1,578	37,431	69,920	5,720	16,679	34,017
Leather industries.....	3	1	1	1	1	1	1	1	1	1
Textile industries.....	1	1	1	1	1	1	1	1	1	1
Knitting mills.....	1	1	1	1	1	1	1	1	1	1
Clothing industries.....	2	1	1	1	1	1	1	1	1	1
Wood industries.....	87	399	880	1,178	226	3,287	5,268	484	1,534	2,395
Furniture and fixture industries.....	8	1	1	1	1	1	1	1	1	1
Paper and allied industries.....	3	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries.....	25	269	573	1,085	81	901	4,400	465	1,868	3,399
Primary metal industries.....	2	1	1	1	1	1	1	1	1	1
Metal fabricating industries (except machinery and transportation equipment industries).....	11	232	533	1,020	75	2,913	5,476	307	1,419	2,446
Machinery industries (except electrical machin- ery).....	1	1	1	1	1	1	1	1	1	1
Transportation equipment industries.....	5	34	71	99	6	181	438	39	118	255
Non-metallic mineral products industries.....	11	463	1,151	2,167	436	3,980	9,497	590	2,883	5,035
Petroleum and coal products industries.....	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries.....	2	1	1	1	1	1	1	1	1	1
Miscellaneous manufacturing industries.....	5	41	88	142	9	217	543	51	204	318
Total, industry groups for which data cannot be published.....	...	3,120	7,025	20,655	6,578	43,665	98,560	3,828	25,987	51,241
Totals, Newfoundland.....	262	9,375	20,677	38,512	8,990	92,576	194,102	11,484	50,694	99,107
Prince Edward Island										
Food and beverage industries.....	76	1,191	2,403	3,245	682	24,986	35,298	1,534	4,718	10,935
Leather industries.....	1	1	1	1	1	1	1	1	1	1
Textile industries.....	5	1	1	1	1	1	1	1	1	1
Wood industries.....	34	49	108	140	19	214	582	60	189	361
Furniture and fixture industries.....	2	1	1	1	1	1	1	1	1	1
Paper and allied industries.....	1	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries.....	8	1	1	1	1	1	1	1	1	1
Primary metal industries.....	1	1	1	1	1	1	1	1	1	1

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14.—Summary Statistics of Manufactures, by Province and Industry Group, 1966—continued

Province and Industry Group	Estab-lish-ments	MANUFACTURING ACTIVITY							TOTAL ACTIVITY		
		Production and Related Workers			Cost of Fuel and Elec-tricity	Cost of Materials and Supplies Used	Value of Ship-ments of Goods and Own Manu-facture	Value Added	Total Employees		Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
	No.		'000	\$'000	\$'000	\$'000	\$'000	\$'000		\$'000	\$'000
Prince Edward Island—concluded											
Metal fabricating industries (except machinery and transportation equipment industries).....	5	38	82	136	14	363	685	318	47	183	336
Machinery industries (except electrical machinery).....											
Transportation equipment industries.....	2	1	1	1	1	1	1	1	1	1	1
Non-metallic mineral products industries.....	5	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries.....	4	1	1	1	1	1	1	1	1	1	1
Miscellaneous manufacturing industries.....	4	1	1	1	2	18	89	70	11	32	78
Total industry groups for which data cannot be published.....	...	360	781	1,263	104	5,936	10,126	4,037	512	1,906	4,072
Totals, Prince Edward Island.....	152	1,647	3,482	4,804	821	31,517	46,781	14,480	2,164	7,028	15,781
Nova Scotia											
Food and beverage industries.....	306	7,810	16,692	22,618	3,410	122,637	191,102	67,246	10,651	35,217	71,855
Leather industries.....	2	1	1	1	1	1	1	1	1	1	1
Textile industries.....	7	416	1,054	1,578	185	4,298	9,625	4,857	504	2,142	5,035
Knitting mills.....	5	1,383	2,258	2,638	134	7,354	13,607	6,660	1,329	3,732	6,629
Clothing industries.....	8	2,538	5,900	440	21	1,205	2,086	286	286	564	997
Wood industries.....	262	2,202	4,903	5,901	683	11,929	25,628	12,795	2,482	7,100	13,197
Furniture and fixture industries.....	40	1,307	3,636	776	36	1,560	2,808	1,345	362	1,022	1,357
Paper and allied industries.....	9	1,783	3,772	8,475	3,374	22,992	51,576	25,337	2,232	11,933	25,277
Printing, publishing and allied industries.....	72	1,789	1,635	3,351	161	3,450	15,540	12,021	1,467	6,301	12,137
Primary metal industries.....	5										
Metal fabricating industries (except machinery and transportation equipment industries).....	55	1,504	3,338	6,867	792	17,880	31,101	12,516	1,969	9,247	13,496
Machinery industries (except electrical machinery).....											
Transportation equipment industries.....	7	307	625	1,234	92	889	2,938	1,671	464	2,269	1,688
Electrical products industries.....	67	4,348	9,270	19,066	973	45,144	80,055	33,997	5,117	24,138	34,051
Electrical products industries.....	4	731	1,471	2,476	75	12,389	16,576	4,028	983	4,257	3,962
Non-metallic mineral products industries.....	37	539	1,177	2,217	1,193	4,910	13,157	7,385	762	3,630	7,778
Petroleum and coal products industries.....	2	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries.....	13	110	240	447	185	3,534	7,379	3,241	282	1,502	3,869
Miscellaneous manufacturing industries.....	39	181	384	606	92	1,352	3,110	1,671	258	1,088	1,898

Total, industry groups for which data cannot be published.	...	3, 010	7, 741	20, 259	2, 734	92, 532	140, 180	50, 935	4, 375	25, 584	52, 260
Totals, Nova Scotia.....	931	23, 020	55, 675	99, 603	14, 140	354, 044	612, 455	246, 702	33, 533	133, 626	255, 485
New Brunswick											
Food and beverage industries.....	248	6, 104	12, 951	17, 647	3, 238	119, 126	182, 604	61, 391	8, 645	28, 938	66, 074
Leather industries.....	4	1	1	1	1	1	1	1	1	1	1
Textile industries.....	13	369	801	1, 010	129	2, 363	5, 148	2, 740	445	1, 208	2, 740
Knitting mills.....	1	1	1	1	1	1	1	1	1	1	1
Clothing industries.....	5	1	1	1	1	1	1	1	1	1	1
Wood industries.....	176	2, 840	6, 570	8, 941	1, 175	25, 504	45, 581	18, 060	3, 273	10, 827	19, 008
Furniture and fixture industries.....	21	114	244	329	26	936	1, 923	974	139	458	977
Paper and allied industries.....	19	4, 321	9, 846	25, 510	14, 554	86, 460	161, 943	61, 542	5, 200	32, 083	62, 687
Printing, publishing and allied industries.....	51	580	1, 252	2, 495	118	10, 617	10, 617	7, 741	1, 008	4, 542	7, 445
Primary metal industries.....	4	52	105	156	20	386	741	336	67	258	346
Metal fabricating industries (except machinery and transportation equipment industries).....	35	1, 125	2, 386	5, 231	243	9, 982	21, 535	11, 319	1, 475	7, 275	12, 603
Machinery industries (except electrical machinery).....	3	1	1	1	1	1	1	1	1	1	1
Transportation equipment industries.....	15	1	1	1	1	1	1	1	1	1	1
Electrical products industries.....	5	718	1, 600	2, 423	214	7, 184	13, 427	7, 028	1, 014	3, 646	6, 991
Non-metallic mineral products industries.....	35	566	1, 262	2, 492	1, 364	3, 756	13, 046	8, 225	1, 728	3, 382	8, 232
Petroleum and coal products industries.....	1	1	1	1	1	1	1	1	1	1	1
Chemical and allied products industries.....	16	224	457	943	951	7, 485	13, 865	5, 427	347	1, 634	5, 759
Miscellaneous manufacturing industries.....	38	459	952	1, 563	100	3, 002	7, 817	4, 656	649	2, 725	4, 794
Total, industry groups for which data cannot be published.....	...	2, 034	4, 476	8, 548	628	47, 750	69, 049	21, 857	2, 759	13, 351	22, 027
Totals, New Brunswick.....	690	19, 506	42, 903	77, 237	22, 761	316, 568	517, 197	211, 295	25, 749	110, 387	220, 012
Quebec											
Food and beverage industries.....	2, 100	36, 329	78, 910	144, 750	24, 143	1, 229, 509	1, 894, 353	648, 138	59, 966	274, 066	683, 329
Tobacco products industries.....	18	5, 399	10, 865	26, 728	795	112, 905	217, 545	106, 773	6, 765	36, 613	107, 754
Rubber industries.....	36	5, 569	11, 481	21, 783	1, 772	55, 821	114, 979	68, 888	7, 684	34, 664	60, 292
Leather industries.....	283	13, 019	28, 322	42, 708	8, 899	83, 540	170, 607	88, 172	16, 181	55, 650	88, 976
Textile industries.....	444	33, 404	73, 928	124, 706	10, 650	413, 566	730, 618	316, 002	43, 804	190, 707	321, 299
Knitting mills.....	207	11, 138	24, 155	34, 105	1, 193	107, 122	188, 307	80, 951	12, 641	44, 173	81, 269
Clothing industries.....	1, 563	54, 091	106, 802	159, 993	2, 358	403, 214	739, 288	338, 640	62, 511	210, 712	340, 716
Wood industries.....	1, 231	16, 876	39, 198	57, 116	2, 624	147, 175	273, 751	121, 861	19, 422	72, 352	125, 447
Furniture and fixture industries.....	600	13, 728	30, 309	50, 870	2, 166	107, 378	220, 447	115, 686	16, 524	68, 279	117, 887
Paper and allied industries.....	209	32, 269	72, 266	188, 721	68, 113	547, 194	1, 131, 529	521, 122	42, 504	280, 524	526, 374
Printing, publishing and allied industries.....	1, 027	15, 269	27, 359	71, 065	2, 008	116, 712	240, 586	223, 575	22, 034	123, 454	226, 035
Primary metal industries.....	105	17, 059	37, 611	93, 917	37, 745	498, 472	847, 753	322, 277	25, 579	160, 166	335, 218
Metal fabricating industries (except machinery and transportation equipment industries).....	972	28, 072	60, 996	141, 359	6, 777	326, 976	685, 462	353, 595	37, 091	202, 525	365, 430
Machinery industries (except electrical machinery).....	118	8, 417	19, 102	42, 522	1, 694	115, 605	236, 507	118, 714	14, 679	83, 931	138, 952
Transportation equipment industries.....	135	20, 370	44, 806	110, 640	4, 757	269, 722	557, 642	286, 521	30, 305	170, 680	302, 405
Electrical products industries.....	145	19, 523	42, 495	95, 698	4, 116	294, 711	559, 161	283, 300	35, 190	198, 972	335, 883

1 Confidential.

14.—Summary Statistics of Manufactures, by Province and Industry Group, 1966—continued

Province and Industry Group	Estab-lish-ments	MANUFACTURING ACTIVITY						TOTAL ACTIVITY		
		Production and Related Workers			Cost of Fuel and Elec-tricity	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu-facture	Total Employees		Value Added
		Number	Man-Hours Paid	Wages				Number	Salaries and Wages	
					No.	'000	\$'000			\$'000
Quebec—concluded										
Non-metallic mineral products industries.....	387	11,449	26,116	57,689	19,882	114,629	317,955	15,597	84,247	197,489
Petroleum and coal products industries.....	17	1,731	3,879	12,616	2,632	335,702	395,841	2,984	22,510	69,103
Chemical and chemical products industries.....	333	12,124	25,486	59,287	17,972	583,921	325,969	25,989	157,069	358,366
Miscellaneous manufacturing industries.....	787	13,931	30,236	50,660	2,499	118,206	259,171	18,529	80,374	148,794
Total, industry groups for which data cannot be published.....	...	...	...	...	...	...	...	175	1,001	—29
Totals, Quebec										
	10,877	395,450	794,333	1,590,164	217,693	5,639,982	10,464,530	516,154	2,543,539	4,945,941
Ontario										
Food and beverage industries.....	2,386	54,598	115,565	238,853	39,071	1,853,615	2,927,978	90,925	454,708	1,101,436
Tobacco products industries.....	16	2,420	4,847	10,201	745	152,432	212,271	3,202	15,550	63,268
Rubber industries.....	55	13,581	29,275	71,772	5,529	194,961	407,506	18,958	107,353	230,483
Leather industries.....	204	12,433	25,377	43,039	1,557	98,337	180,053	14,643	56,332	84,452
Textile industries.....	390	23,962	50,733	97,213	8,808	323,011	561,765	30,205	138,177	239,981
Knitting mills.....	118	7,615	15,578	23,723	1,009	60,750	110,742	8,636	29,545	51,222
Clothing industries.....	548	21,527	42,831	69,367	994	143,450	283,002	15,143	92,853	144,447
Wood industries.....	806	16,014	34,973	61,598	5,007	136,854	273,651	19,213	85,526	135,526
Furniture and fixture industries.....	936	16,841	36,251	68,971	2,652	139,764	294,291	20,631	93,907	156,311
Paper and allied industries.....	276	33,448	73,095	134,432	45,900	555,954	1,101,817	44,408	265,456	523,368
Printing, publishing and allied industries.....	1,491	23,789	47,295	131,301	4,247	215,489	638,592	42,584	250,318	432,304
Primary metal industries.....	210	56,543	118,128	335,673	71,034	877,911	1,785,586	69,866	442,179	859,818
Metal fabricating industries (except machinery and transportation equipment industries).....	1,933	61,681	132,340	322,087	18,679	820,210	1,637,373	82,710	465,762	856,813
Machinery industries (except electrical machinery).....	438	32,551	70,562	186,802	7,434	571,272	1,073,080	51,223	317,280	702,563
Transportation equipment industries.....	338	74,171	161,276	455,572	22,318	2,229,861	3,405,424	97,968	642,702	1,804,336
Electrical products industries.....	410	54,023	113,967	251,169	10,805	781,613	1,503,741	82,532	439,991	804,763
Non-metallic mineral products industries.....	538	19,755	44,791	106,885	33,158	219,040	303,291	26,347	151,654	313,648
Petroleum and coal products industries.....	25	2,225	4,940	16,052	4,429	430,764	525,150	7,955	64,177	91,503
Chemical and chemical products industries.....	586	20,701	44,868	112,471	50,026	602,817	1,314,930	39,568	249,413	711,313
Miscellaneous manufacturing industries.....	1,282	30,681	64,350	125,492	6,344	304,778	694,157	43,215	209,323	401,847
Total, industry groups for which data cannot be published.....	...	...	...	...	...	...	...	444	4,351	—239
Totals, Ontario										
	12,956	578,559	1,232,025	2,912,675	339,748	10,712,883	19,452,570	820,357	4,571,684	9,209,568

Manitoba		7,137	15,051	31,210	4,798	278,000	384,708	103,823	11,640	54,782	109,559
Food and beverage industries.....	371	1	1	1	1	1	1	1	1	1	1
Rubber industries.....	17	698	1,383	2,193	63	6,541	11,386	828	828	2,722	828
Leather industries.....	40	545	1,146	1,678	99	8,887	12,857	4,448	676	2,380	4,590
Textile industries.....	5	1	1	1	1	1	1	1	1	1	1
Knitting mills.....	131	6,051	12,164	16,552	267	42,562	75,003	33,302	6,780	20,296	33,345
Clothing industries.....	111	1,007	2,220	3,620	385	7,626	15,640	7,644	1,174	4,626	8,057
Wood industries.....	116	1,636	3,401	5,949	260	15,004	27,600	12,346	2,018	8,048	12,673
Furniture and fixture industries.....	116	1,636	3,401	5,949	260	15,004	27,600	12,346	2,018	8,048	12,673
Paper and allied industries.....	26	1,453	3,113	6,745	2,103	26,585	54,373	26,235	1,918	9,490	26,455
Printing, publishing and allied industries.....	192	2,303	4,849	11,200	2,388	16,167	51,502	35,088	4,049	19,437	35,377
Primary metal industries.....	17	2,195	4,837	12,589	6,039	19,329	51,534	27,795	2,665	16,490	28,213
Metal fabricating industries (except machinery and transportation equipment industries).....	137	3,478	7,424	15,659	787	41,891	81,978	38,782	4,748	23,149	40,331
Machinery industries (except electrical machinery).....	37	2,097	4,435	8,363	388	31,017	54,991	25,899	2,926	14,105	26,857
Transportation equipment industries.....	34	2,186	4,864	9,412	506	20,543	49,201	21,974	3,227	15,439	22,399
Electrical products industries.....	19	857	1,851	3,259	218	12,882	24,449	11,592	1,493	6,676	11,611
Non-metallic mineral products industries.....	56	1,023	2,265	5,025	2,612	12,530	34,430	19,583	1,475	7,754	20,175
Petroleum and coal products industries.....	7	293	617	2,056	579	48,447	93,789	10,588	457	3,367	17,713
Chemical and chemical products industries.....	37	403	876	1,580	2,103	24,810	51,502	11,294	883	4,363	12,879
Miscellaneous manufacturing industries.....	101	803	1,677	3,168	385	3,417	8,673	6,152	1,113	4,969	7,310
Total, industry groups for which data cannot be published.....	...	197	394	504	33	1,516	2,879	1,355	450	1,949	1,344
Totals, Manitoba.....	1,456	34,406	72,566	141,077	29,017	695,600	1,019,000	402,951	48,523	220,051	416,884
Saskatchewan		3,667	7,633	16,833	2,967	159,373	220,674	62,140	6,249	29,945	66,180
Food and beverage industries.....	253	75	156	226	23	760	1,242	547	108	365	613
Textile industries.....	10	250	497	707	22	2,341	4,328	1,998	306	1,210	2,053
Clothing industries.....	5	956	1,952	3,671	467	9,090	16,952	7,323	1,169	4,772	7,965
Wood industries.....	109	62	127	215	15	616	1,284	1,661	78	288	1,069
Furniture and fixture industries.....	36	1	1	1	1	1	1	1	1	1	1
Paper and allied industries.....	6	1	1	1	1	1	1	1	1	1	1
Printing, publishing and allied industries.....	123	982	1,975	4,637	193	4,762	18,624	13,660	1,608	7,696	13,892
Primary metal industries.....	3	1	1	1	1	1	1	1	1	1	1
Metal fabricating industries (except machinery and transportation equipment industries).....	73	968	2,036	4,249	211	15,092	26,369	11,194	1,351	6,352	12,051
Machinery industries (except electrical machinery).....	23	319	676	1,461	91	3,364	7,702	4,177	618	3,470	4,350
Transportation equipment industries.....	8	42	87	203	11	484	832	396	188	1,227	1,414
Electrical products industries.....	4	154	313	600	60	5,707	8,711	3,217	220	900	3,209
Non-metallic mineral products industries.....	50	809	1,703	3,695	1,364	12,482	27,404	14,394	1,046	5,152	15,050
Petroleum and coal products industries.....	10	594	1,194	3,790	866	73,069	90,247	17,113	801	5,432	17,204
Chemical and chemical products industries.....	12	144	316	917	379	8,794	11,356	2,727	255	1,498	3,188
Miscellaneous manufacturing industries.....	49	240	518	917	52	1,527	3,528	1,925	296	1,207	2,105
Total, industry groups for which data cannot be published.....	...	904	1,922	4,856	2,081	16,072	31,130	13,063	1,396	8,401	12,521
Totals, Saskatchewan.....	774	10,166	21,109	46,857	9,703	310,533	470,381	151,531	15,689	77,947	161,463

1 Confidential.

14.—Summary Statistics of Manufactures, by Province and Industry Group, 1966—continued

Province and Industry Group	Estab-lish-ments	MANUFACTURING ACTIVITY						TOTAL ACTIVITY			
		Production and Related Workers			Cost of Fuel and Elec-tricity	Cost of Materials and Supplies Used	Value of Ship-ments of Goods of Own Manu-facture	Value Added	Total Employees		Value Added
		Number	Man-Hours Paid	Wages					Number	Salaries and Wages	
					No.	'000	\$'000	\$'000			\$'000
Alberta											
Food and beverage industries.....	481	8,061	16,996	37,452	5,087	443,700	584,738	13,540	66,558	145,974	
Rubber industries.....	4	104	226	356	17	1,211	1,983	119	426	867	
Leather industries.....	7	374	841	1,555	229	6,774	10,945	513	2,379	3,988	
Textile industries.....	21	3	1	1	1	1	1	1	1	1	
Knitting mills.....	3	1	3,624	5,008	73	13,079	24,688	2,086	7,300	12,989	
Clothing industries.....	20	1,847	8,467	16,535	1,713	45,482	80,316	4,923	21,845	39,199	
Wood industries.....	258	4,058	8,467	3,733	8,075	16,257	8,112	1,155	4,808	8,523	
Furniture and fixture industries.....	106	963	2,020	5,267	1,673	26,232	49,941	1,401	7,965	22,229	
Paper and allied industries.....	21	989	2,096	5,448	339	12,053	30,433	3,075	15,501	30,475	
Printing, publishing and allied industries.....	205	1,845	3,750	9,448	2,469	56,501	89,435	2,514	15,624	31,386	
Primary metal industries.....	21	1,766	3,677	10,099	731	49,244	94,355	4,756	25,351	46,974	
Metal fabricating industries (except machinery and transportation equipment industries).....	198	3,512	7,326	17,688							
Machinery industries (except electrical machinery).....	39	805	1,773	3,903	268	10,491	21,979	1,678	9,798	15,280	
Transportation equipment industries.....	55	1,366	2,730	5,872	263	16,908	31,636	2,041	10,260	15,206	
Electrical products industries.....	13	444	916	1,634	116	9,711	16,327	667	2,839	7,909	
Non-metallic mineral products industries.....	114	2,922	6,207	14,362	3,505	30,219	54,588	3,673	19,066	54,944	
Petroleum and coal products industries.....	12	732	1,559	5,240	2,074	107,012	140,955	1,034	7,790	33,022	
Chemical and chemical products industries.....	42	1,575	3,505	9,433	5,202	41,255	105,988	2,617	16,551	64,808	
Miscellaneous manufacturing industries.....	164	778	1,628	3,050	179	5,512	12,925	1,147	5,139	8,934	
Total, industry groups for which data cannot be published.....	...	375	843	1,973	177	9,366	16,883	672	3,761	7,262	
Totals, Alberta.....	1,784	32,596	68,251	152,607	24,277	892,825	1,429,020	47,611	212,988	519,970	
British Columbia											
Food and beverage industries.....	625	10,996	21,716	50,331	6,894	374,060	570,279	18,321	92,217	208,938	
Rubber industries.....	7	1	1	1	1	1	1	1	1	1	
Leather industries.....	15	249	491	793	22	1,525	3,398	296	1,093	2,043	
Textile industries.....	49	1,478	2,511	6,723	154	12,763	6,085	929	3,816	6,432	
Knitting mills.....	7	1	1	1	1	1	1	1	1	1	
Clothing industries.....	51	1,789	3,471	5,686	97	10,469	22,100	2,064	7,502	11,652	
Wood industries.....	845	34,924	69,648	189,411	15,507	492,692	854,881	39,699	225,126	357,402	

Furniture and fixture industries.....	257	2,041	4,119	8,998	304	17,711	37,827	20,127	2,541	12,221	20,381
Paper and allied industries.....	53	11,355	23,816	77,798	29,550	257,339	525,950	246,092	15,779	116,307	246,183
Printing, publishing and allied industries.....	310	2,846	5,687	16,990	629	22,381	80,150	57,377	5,497	31,820	57,007
Primary metal industries.....	40	6,149	12,588	38,384	5,721	97,469	214,857	114,314	8,289	54,771	118,245
Metal fabricating industries (except machinery and transportation equipment industries).....	392	6,577	13,517	38,077	1,666	85,854	179,363	93,169	8,828	53,332	95,761
Machinery industries (except electrical machinery).....	58	2,218	4,527	13,163	533	33,748	65,220	33,213	3,561	22,546	34,261
Transportation equipment industries.....	143	4,564	9,526	27,897	739	47,079	99,177	52,113	5,984	37,624	54,691
Electrical products industries.....	39	1,313	2,727	6,173	281	24,951	44,463	22,838	2,399	13,058	22,821
Non-metallic mineral products industries.....	137	2,009	4,219	11,498	3,864	25,255	67,532	38,273	2,935	17,085	41,225
Petroleum and coal products industries.....	13	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries.....	106	1,747	3,650	9,654	5,494	51,940	106,338	48,370	3,218	19,094	51,018
Miscellaneous manufacturing industries.....	297	1,605	3,273	7,260	361	9,011	23,972	14,709	2,265	11,411	20,283
Total, industry groups for which data cannot be published.....	...	1,087	2,311	6,302	1,681	124,638	155,403	30,907	1,966	12,989	32,031
Totals, British Columbia.....	3,444	92,197	186,763	510,326	73,496	1,652,834	3,063,675	1,347,065	124,571	731,013	1,381,175
Yukon and Northwest Territories											
Food and beverage industries.....	5	11	22	44	23	139	343	181	30	136	239
Wood industries.....	10	34	70	182	29	80	346	327	38	190	328
Printing, publishing and allied industries.....	3	1	1	1	1	1	1	1	1	1	1
Non-metallic mineral products industries.....	1	1	1	1	1	1	1	1	1	1	1
Petroleum and coal products industries.....	1	1	1	1	1	1	1	1	1	1	1
Chemical and chemical products industries.....	1	1	1	1	1	1	1	1	1	1	1
Total, industry groups for which data cannot be published.....	...	66	137	468	27	2,112	3,045	981	91	607	1,305
Totals, Yukon and Northwest Territories.....	21	111	229	633	80	2,331	3,734	1,489	159	933	1,870

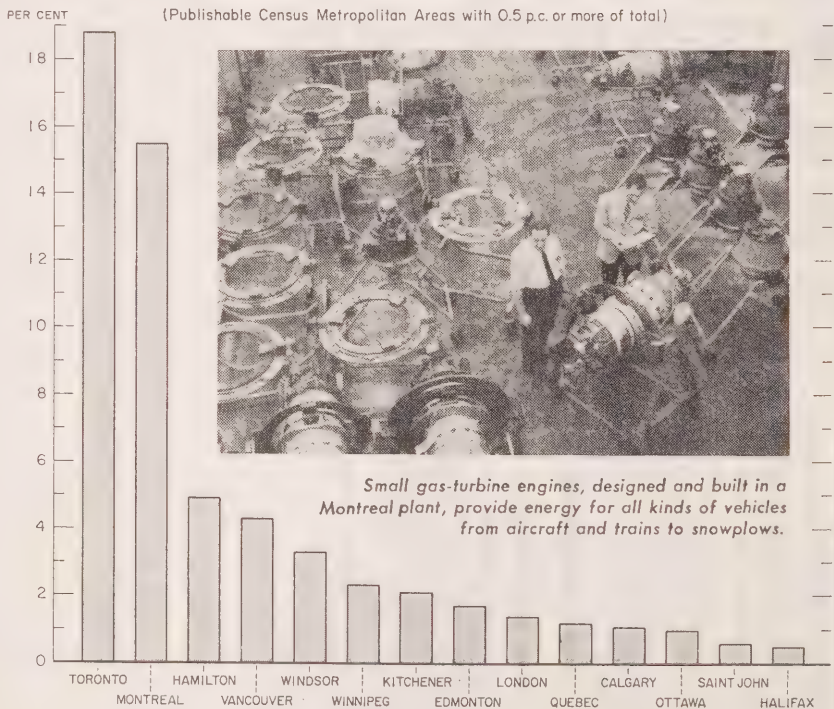
¹Confidential.

Distribution by Metropolitan Area

Seven Census Metropolitan Areas accounted for slightly more than half of the shipments of goods of own manufacture of the Canadian manufacturing industries in 1966. The two largest, by a substantial margin, were Toronto and Montreal. The Toronto Census Metropolitan Area was only slightly larger than the Montreal area in terms of establishments and number of employees, with a somewhat wider margin in terms of shipments of goods of own manufacture, salaries and wages, and value added (total activity).

Together the two centres accounted for approximately one third of Canadian totals for the statistics mentioned, as shown in Tables 15 and 16. Their preponderance is illustrated by the fact that Montreal had almost four times as many employees in manufacturing establishments as Hamilton, the next largest Census Metropolitan Area in terms of all these statistics except number of establishments. The Montreal area had more than three times as much shipments, salaries and wages and almost three times as much value added (total activity).

PERCENTAGE OF TOTAL CANADIAN SHIPMENTS OF GOODS
OF OWN MANUFACTURE ACCOUNTED FOR
BY SELECTED CENSUS METROPOLITAN AREAS, 1966



There is a marked variation between the order of the largest Census Metropolitan Areas in terms of number of establishments from rankings obtaining for the other statistics mentioned. In 1966, Vancouver was in third place in terms of establishments and Winnipeg in fourth place, whereas in terms of shipments these areas ranked, respectively, fourth and sixth.

These rankings are influenced by the type of industry predominating in the areas. Hamilton Metropolitan Area as a centre mainly specialized in heavy industry, having large primary iron and steel mills in the city of Hamilton, has a larger average size of establishment than other metropolitan areas measured by virtually any statistic. It has only one eighth as many establishments as Montreal, although for the other measurements it has one quarter or one third as much as Montreal. Windsor Census Metropolitan Area, with its important establishments in the transportation equipment industries, had only 1.2 p.c. of the number of manufacturing establishments in Canada but had 3.1 p.c. of value added (total activity).

The employment statistics used represent only employees classified to manufacturing establishments as such. Canadian and provincial totals for the manufacturing industries also include employees classified to head offices, sales offices and auxiliary units. Such reporting units are not counted in regular tabulations of the statistics of the manufacturing industries for particular sub-provincial areas, although a special distribution is published by Census Metropolitan Area.* Such employees located in non-manufacturing reporting units are heavily concentrated in a few large centres. In only one or two cases, however, could the ranking of the Census Metropolitan Areas shown here be affected and for some areas the relevant employees and salaries and wages are confidential, so that such head office data have not been included.

* Census Metropolitan Areas are aggregations of municipalities and parts of municipalities, grouped mainly for purposes of the Census of Population; in a few instances Census Metropolitan Areas as used in the Census of Manufactures differ because of the practice of aggregating whole municipalities only. There are, of course, urban areas which, in terms of population or manufacturing activity, are larger than the smaller Census Metropolitan Areas shown.

15.—Relative Importance of Census Metropolitan Areas in Canadian Manufacturing Industries, 1966

(Areas ranked by value of shipments of goods of own manufacture)

NOTE.—Excludes Sudbury Census Metropolitan Area, data for which are confidential. Census Metropolitan Area data shown exclude head offices, sales offices and auxiliary unit data (included in Canada total).

Census Metropolitan Area	Establishments		Shipments of Goods of Own Manufacture		Total Employees		Total Salaries and Wages		Value Added, Total Activity	
	P.C.	Cumulated P.C.	P.C.	Cumulated P.C.	P.C.	Cumulated P.C.	P.C.	Cumulated P.C.	P.C.	Cumulated P.C.
Toronto, Ont.....	16.9	16.9	18.8	18.8	17.8	17.8	18.4	18.4	19.7	19.7
Montreal, Que.....	16.5	33.4	15.5	34.3	16.7	34.5	15.7	34.1	15.0	35.6
Hamilton, Ont.....	2.1	35.5	4.9	39.2	4.4	38.9	4.9	39.0	5.4	41.0
Vancouver, B.C.....	5.6	41.1	4.3	43.5	3.9	42.8	4.1	43.1	4.1	45.1
Windsor, Ont.....	1.2	42.3	3.3	46.8	2.1	44.9	2.8	45.9	3.1	48.2
Winnipeg, Man.....	3.1	45.4	2.3	49.1	2.4	47.3	2.0	47.9	2.0	50.2
Kitchener, Ont.....	1.5	46.9	2.1	51.2	2.5	49.8	2.3	50.2	2.2	52.4
Edmonton, Alta.....	1.6	48.5	1.7	52.9	1.2	51.0	1.2	51.4	1.5	53.9
London, Ont.....	1.0	49.5	1.4	54.3	1.3	52.3	1.3	52.7	1.6	55.5
Quebec, Que.....	1.6	51.1	1.2	55.5	1.4	53.7	1.3	54.0	1.3	56.8
Calgary, Alta.....	1.4	52.5	1.1	56.6	0.8	54.5	0.8	54.8	0.9	57.7
Ottawa, Ont.....	1.0	53.5	1.0	57.6	1.1	55.6	1.1	55.9	1.1	58.8
Saint John, N.B.....	0.3	53.8	0.6	58.2	0.4	56.0	0.4	56.3	0.5	59.3
Halifax, N.S.....	0.5	54.3	0.5	58.7	0.5	56.5	0.4	56.7	0.5	59.8
Regina, Sask.....	0.4	54.7	0.4	59.1	0.3	56.8	0.2	56.9	0.3	60.1
Saskatoon, Sask.....	0.4	55.1	0.4	59.5	0.3	57.1	0.2	57.1	0.3	60.4
Victoria, B.C.....	0.7	55.8	0.3	59.8	0.4	57.5	0.4	57.5	0.3	60.7
St. John's, Nfld.....	0.2	56.0	0.1	59.9	0.2	57.7	0.1	57.6	0.1	60.8

16.—Summary Statistics of Manufactures, by Census Metropolitan Area, 1965 and 1966

Census Metropolitan Area and Year	Estab-lish-ments	MANUFACTURING ACTIVITY						TOTAL ACTIVITY		
		Production and Related Workers			Cost of Fuel and Elec-tricity	Cost of Materials and Supplies Used	Value of Shipments of Goods of Own Manu-facture	Total Employees		Total Value Added
		Number	Man-Hours Paid	Wages				Number	Salaries and Wages	
No.		'000	'000	\$'000	\$'000	\$'000	\$'000		\$'000	\$'000
Calgary, Alta.....	1965	7,884	16,532	37,267	4,679	231,964	367,068	11,985	59,531	138,869
	1966	454	8,750	18,481	5,357	263,708	416,672	12,931	67,897	160,011
Edmonton, Alta.....	1965	535	13,822	29,273	9,940	354,777	578,967	19,778	96,506	233,872
	1966	548	14,301	29,909	68,169	241,357	635,953	20,307	105,715	251,679
Halifax, N.S.....	1965	150	5,531	11,721	2,113	111,521	187,917	8,056	35,238	77,868
	1966	156	5,552	11,951	2,182	115,889	196,785	8,083	38,408	82,603
Hamilton, Ont.....	1965	702	53,005	112,370	39,572	883,250	1,775,907	69,909	395,005	894,093
	1966	709	54,987	115,703	41,919	898,677	1,840,520	71,679	424,139	924,234
Kitchener, Ont.....	1965	498	30,663	64,991	127,135	7,537	372,712	333,652	39,681	180,008
	1966	516	32,751	68,614	143,545	8,576	417,074	369,311	41,895	200,176
London, Ont.....	1965	321	14,594	20,661	64,566	4,782	224,181	454,559	227,283	245,130
	1966	318	15,357	32,625	71,872	5,218	261,999	515,334	256,145	277,814
Montreal, Que.....	1965	5,446	191,473	408,651	778,408	53,641	2,879,731	5,257,210	2,389,677	2,496,410
	1966	5,518	198,555	422,815	866,529	56,967	3,160,663	5,788,389	2,621,682	2,748,370
Ottawa, Ont.....	1965	350	12,396	26,438	57,692	13,481	158,805	352,089	184,236	190,152
	1966	350	12,629	27,146	61,967	14,141	172,105	377,394	193,967	198,108
Quebec, Que.....	1965	551	17,480	37,007	68,181	10,209	208,644	418,431	198,882	204,262
	1966	548	17,789	37,398	74,895	10,376	231,806	452,942	215,684	222,049
Regina, Sask. ¹	1965	127	2,381	4,958	10,947	1,328	79,337	190,371	40,074	42,666
	1966	135	2,631	5,550	13,115	1,575	92,749	193,535	46,077	48,297
Saint John, N.B.....	1965	106	5,016	11,087	21,616	5,021	128,863	207,157	71,860	74,495
	1966	104	5,109	11,211	23,765	6,174	131,930	216,108	78,453	80,912
St. John's, Nfld.....	1965	74	1,718	3,591	5,469	675	17,215	36,705	10,144	19,980
	1966	79	2,014	4,450	7,354	1,128	22,338	47,479	24,299	25,597
Saskatoon, Sask. ¹	1965	142	2,609	5,411	11,524	1,758	80,167	118,359	36,828	39,342
	1966	141	2,914	5,999	13,566	1,887	94,800	137,244	41,378	44,090
Toronto, Ont.....	1965	5,441	190,443	405,159	876,726	60,723	3,402,537	6,129,037	2,739,067	3,017,856
	1966	5,629	204,303	426,560	1,001,141	65,959	3,932,569	7,023,248	3,115,492	3,404,347
Vancouver, B.C.....	1965	1,855	44,411	89,703	224,709	19,450	786,989	1,395,032	599,563	624,481
	1966	1,859	46,798	94,212	250,907	20,867	910,701	1,598,989	688,838	713,179
Victoria, B.C.....	1965	218	4,921	9,836	26,340	1,344	66,001	125,093	57,757	59,561
	1966	218	4,735	9,541	26,206	1,317	66,151	121,001	55,067	56,251
Windsor, Ont.....	1965	403	24,089	53,441	150,957	9,937	540,193	935,326	392,627	428,715
	1966	398	26,662	58,308	172,849	11,622	716,286	1,214,332	434,529	453,446
Winnipeg, Man.....	1965	1,017	26,860	56,415	103,022	9,824	466,761	765,265	299,552	313,420
	1966	1,027	28,252	59,217	114,642	10,105	513,093	847,538	331,539	343,082

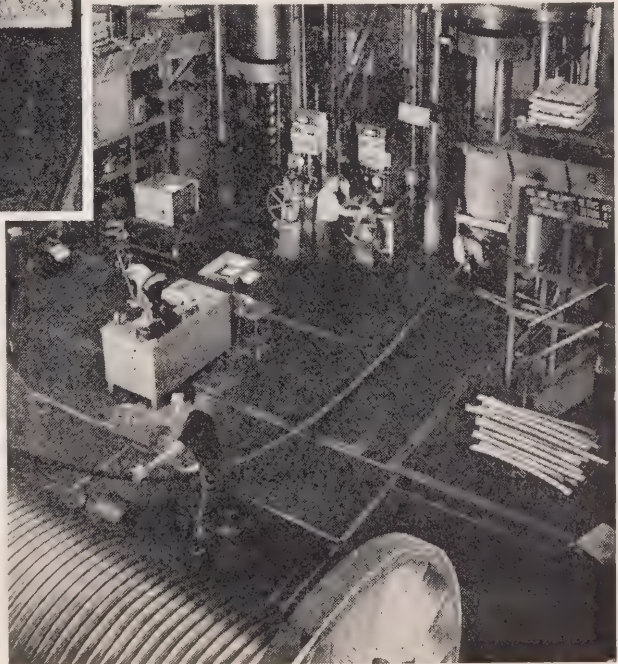
¹ Classified as a Census Metropolitan Area commencing 1966. C.M.A. is indicated.



Gyroscopes and accelerometers used in airborne inertial navigation systems are assembled in a super-clean room where surgical procedures keep the delicate products free from even the most minute contaminants.



The versatility of Canadian furriers' art is displayed in this striking black and white mink coat, a pinnacle in the world of fashion.



Lead alloy being applied to a heavy armored submarine cable at a Montreal plant. This length, one of the largest and longest ever made in North America, now lies under the Bosphorus, a narrow strait that joins the Black Sea and the Sea of Marmara, and so links the continents of Europe and Asia.

Subsection 3.—Size of Manufacturing Establishments Based on Employment and Shipments

Size Based on Employment

About one half (53.0 p.c.) of all persons employed in Canada's manufacturing industries in 1966 worked in establishments employing 200 or more persons and about one fifth (20.5 p.c.) worked in establishments employing 1,000 or more. There were 153 establishments employing 1,000 or more in 1966 compared with 142 in 1965 and 108 in 1961.

17.—Establishments and Employment in the Manufacturing Industries, by Number Employed per Establishment, 1949, 1955, 1961 and 1966

Size Group ¹	Estab- lishments	Em- ployees	Working Owners and Partners	Pro- portion of Total Em- ployment	Estab- lishments	Em- ployees	Working Owners and Partners	Pro- portion of Total Em- ployment ¹
	1949				1955 ²			
	No.	No.		p.c.	No.	No.		p.c.
Under 5 employed.....	16,647	34,865		3.0	17,602	36,340		2.8
5 to 14 "	9,133	75,482		6.4	9,864	81,471		6.3
15 to 49 "	5,967	159,012		13.6	6,340	169,575		13.1
50 to 99 "	1,905	132,069		11.3	2,082	144,411		11.1
100 to 199 "	1,114	156,084		13.3	1,175	163,091		12.6
200 to 499 "	694	213,130		18.2	739	227,667		17.5
500 to 999 "					243	167,720		12.9
1,000 to 1,499 "	332	391,455		33.4	76	91,840		7.1
1,500 or more "					61	200,413		15.4
Head offices.....	—	9,110		0.8	—	15,933		1.2
Totals.....	35,792	1,171,207		100.0	38,182	1,298,461		100.0
	1961				1966			
	No.	No.	No.	p.c.	No.	No.	No.	p.c.
Under 5 employed.....	12,352	16,846	10,675	2.0	11,062	15,740	9,435	1.0
5 to 14 "	9,134	71,207	5,150	5.6	9,155	73,091	3,749	4.4
15 to 49 "	6,829	184,550	1,055	13.6	7,289	196,914	618	11.9
50 to 99 "	2,445	169,319	88	12.4	2,708	189,750	57	11.5
100 to 199 "	1,377	190,540	17	13.9	1,644	229,605	27	13.9
200 to 499 "	869	261,628	4	19.1	1,066	326,014	8	19.8
500 to 999 "	243	169,392	—	12.3	300	208,498	—	12.7
1,000 to 1,499 "	55	68,743	—	5.0	81	98,143	—	6.0
1,500 or more "	53	165,577	—	12.1	72	238,116	—	14.5
Head offices ³	—	54,733	—	4.0	—	70,153	—	4.3
Totals.....	33,357	1,352,535	16,989	100.0	33,377	1,646,024	13,894	100.0

¹ Includes working owners and partners.

² Newfoundland included from 1955.

with years prior to 1961 when coverage of head offices was incomplete.

³ Not comparable

18.—Establishments in the Manufacturing Industries classified by Number Employed and by Province, 1966

Province or Territory	Number Employed									Total
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 1,499	1,500 or Over	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	106	54	54	22	17	.....	9	.....	.....	262
Prince Edward Island.....	81	36	25	5	5	.....	—	—	—	152
Nova Scotia.....	334	266	213	66	19	25	.....	8	.....	931
New Brunswick.....	265	172	149	48	32	17	.....	7	—	690
Quebec.....	3,667	2,897	2,423	910	503	335	96	26	20	10,877
Ontario.....	3,769	3,500	2,964	1,195	782	536	153	41	46	12,986
Manitoba.....	541	394	292	117	73	30	.....	9	—	1,456
Saskatchewan.....	321	249	140	32	.....	32	.....	—	—	774
Alberta.....	672	576	335	98	63	32	.....	8	—	1,784
British Columbia, Yukon Territory and North-west Territories.....	1,306	1,011	694	215	127	77	24	.....	11	3,465
Canada.....	11,062	9,155	7,289	2,708	1,644	1,066	300	81	72	33,377

19.—Number of Establishments in the Manufacturing Industries, by Industry Group and Employment Size Group, 1966

Industry Group	Establishments with Total Employed of—									Total
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 to 1,499	1,500 or Over	
Food and beverage industries.....	2,376	2,316	.....	1,758	.....	279	170	36	.....	6,945
Tobacco products industries.....	.....	9	.....	4	.....	15	.....	6	.....	34
Rubber industries.....	14	17	18	11	13	16	8	.....	7	104
Leather industries.....	94	111	150	.....	182	.....	.....	—	—	537
Textile industries.....	199	.....	528	96	66	63	20	.....	8	980
Knitting mills.....	47	57	111	67	38	24	3	—	—	347
Clothing industries.....	.....	980	788	.....	.....	565	.....	.....	—	2,333
Wood industries.....	.....	2,713	774	.....	364	55	.....	13	.....	3,919
Furniture and fixture industries.....	1,198	496	354	.....	203	27	4	—	—	2,282
Paper and allied industries.....	42	.....	260	100	.....	158	42	12	9	623
Printing, publishing and allied industries.....	1,525	1,084	586	167	80	46	13	.....	6	3,507
Primary metal industries.....	47	.....	234	.....	48	40	19	.....	20	408
Metal fabricating industries (except machinery and transportation equipment industries).....	1,045	1,176	986	296	169	106	28	.....	5	3,811
Machinery industries (except electrical machinery).....	92	189	203	97	.....	135	.....	5	5	726
Transportation equipment industries.....	.....	644	.....	.....	64	70	.....	27	.....	805
Electrical products industries.....	66	.....	270	99	.....	185	.....	8	11	639
Non-metallic mineral products industries.....	394	410	349	101	65	39	.....	12	—	1,370
Petroleum and coal products industries.....	.....	20	.....	30	17	9	.....	4	—	89
Chemical and chemical products industries.....	.....	585	.....	494	.....	53	.....	20	.....	1,152
Miscellaneous manufacturing industries.....	1,222	728	.....	678	89	37	.....	12	.....	2,766
Totals, All Industries.....	11,062	9,155	7,289	2,708	1,644	1,066	300	81	72	33,377

20.—Percentage of Manufacturing Establishments Accounted for by Specified Employment Size Group, 1966

Province or Region	Establishments with Total Employed of—						All Size Groups
	Under 5	5 to 14	15 to 49	50 to 99	100 to 199	200 or Over	
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	
Atlantic Provinces.....	38.6	26.0	21.7	6.9	3.5	3.3	100.0
Quebec.....	33.7	26.6	22.3	8.4	4.6	4.4	100.0
Ontario.....	29.0	27.0	22.8	9.2	6.0	6.0	100.0
Prairie Provinces.....	38.2	30.4	19.1	6.1	4.0	2.2	100.0
British Columbia, Yukon Territory and Northwest Territories.....	37.7	29.2	20.0	6.2	3.7	3.2	100.0
Canada.....	33.2	27.4	21.8	8.1	4.9	4.6	100.0

Size Based on Shipments

The average size of a manufacturing establishment in terms of shipments of goods of own manufacture was \$1,118,000 in 1966, about 59 p.c. greater than in 1961. This small average size, however, is influenced by the large number of very small establishments which account for only a minor share of the total shipments. Establishments with shipments of \$1,000,000 or more contributed 87 p.c. of all shipments of goods of own manufacture from the manufacturing industries.

21.—Establishments and Shipments in the Manufacturing Industries, by Shipments per Establishment, 1961 and 1966

Value Group	Estab-lish-ments	Value of Shipments of Goods of Own Manufacture	Average per Estab-lish-ment	Pro-portion of Total Ship-ments	Estab-lish-ments	Value of Shipments of Goods of Own Manufacture	Average per Estab-lish-ment	Pro-portion of Total Ship-ments
	1961				1966			
	No.	\$'000	\$'000	p.c.	No.	\$'000	\$'000	p.c.
Under \$25,000.....	9,245	106,779	12	0.5	6,527	82,129	13	0.2
\$25,000 but under \$ 50,000.....	4,677	168,079	36	0.7	4,393	159,432	36	0.4
50,000 " " 100,000.....	4,562	328,307	72	1.4	4,497	323,517	73	0.9
100,000 " " 200,000.....	4,260	610,675	143	2.6	4,343	626,331	144	1.7
200,000 " " 500,000.....	4,555	1,462,027	321	6.2	5,274	1,697,543	322	4.6
500,000 " " 1,000,000.....	2,400	1,689,457	704	7.2	3,033	2,158,215	712	5.8
1,000,000 " " 5,000,000.....	2,875	6,123,965	2,130	26.1	3,962	8,621,398	2,176	23.1
5,000,000 or over.....	783	12,949,667	16,539	55.3	1,348	23,634,359	17,533	63.3
Totals and Averages.....	33,357	23,438,956	703	100.0	33,377	37,303,455	1,118	100.0

22.—Establishments in the Manufacturing Industries classified by Value of Shipments of Goods of Own Manufacture and by Province, 1966

Provinces or Territory	Up to \$24,999	\$25,000 to \$99,999	\$100,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$4,999,999	\$5,000,000 or Over	Total
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	90	49	60	25	50		262
Prince Edward Island.....	53	40	39	8			152
Nova Scotia.....	260	263	249	54		20	931
New Brunswick.....	189	172	176	72		18	690
Quebec.....	2,126	2,866	3,266	1,083		382	10,877
Ontario.....	2,099	3,228	3,856	1,251	1,857	695	12,986
Manitoba.....	344	382	396	121	178	35	1,456
Saskatchewan.....	194	266	190	45	63	16	774
Alberta.....	364	589	503	125	147	56	1,784
British Columbia, Yukon Territory and Northwest Territories.....	808	1,035	882	249	369	122	3,465
Canada.....	6,527	8,890	9,617	3,033	3,962	1,348	33,377

CHAPTER XVII.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

This Chapter provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity—value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building, construction of dwelling units and housing statistics of the Census are covered in Section 3.

Section 1.—Capital Expenditures on Construction and on Machinery and Equipment†

A study early in 1969 indicated that capital expenditures in Canada by business establishments, institutions, governments and for housing would be \$17,046,000,000 during 1969. This total represents an increase of almost 9 p.c. over the \$15,678,000,000 estimated for 1968. Within the total, new construction is expected to rise by about 9 p.c. and outlays for new machinery and equipment are estimated to be about 8 p.c. higher than in 1968.

The capital program planned for 1969, if accomplished, would represent the first significant year-to-year increase in investment in Canada since 1966. In both 1967 and 1968, total capital outlays rose by only about 2 p.c. and, if allowance is made for price increases, the physical volume of investment activity probably declined in each year. Although the rate of gain indicated for 1969 is more moderate than those occurring in the years from 1964 to 1966, investment spending will be rising at least in line with the growth expected for the economy as a whole.

*Except where otherwise noted, prepared (April 1969) in the Business Finance Division, Dominion Bureau of Statistics.

†Capital expenditure figures for 1967 and earlier years are final and those for 1968 are preliminary and subject to revision at a later date. Capital expenditures for 1967 and 1968, as well as intentions for 1969, appear in greater detail in the publication *Private and Public Investment in Canada, Outlook 1969*, available from the Queen's Printer (Catalogue No. 61-1205).

1.—Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1957) Dollars, 1959-69

NOTE.—Actual expenditures 1959-67; preliminary actual 1968; intentions 1969.

Year	Capital Expenditures						Total Expenditure as Percentage of Gross National Product	
	Construction		Machinery and Equipment		Totals			
	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars	Current Dollars	Constant 1957 Dollars
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p. c.	p. c.
1959.....	5,709	5,557	2,708	2,590	8,417	8,147	24.1	24.5
1960.....	5,453	5,224	2,809	2,636	8,262	7,860	22.8	23.0
1961.....	5,518	5,346	2,654	2,456	8,172	7,802	21.8	22.3
1962.....	5,787	5,475	2,928	2,634	8,715	8,109	21.5	21.7
1963.....	6,157	5,613	3,236	2,837	9,393	8,450	21.6	21.5
1964.....	7,004	6,119	3,940	3,334	10,944	9,453	23.1	22.6
1965.....	8,115	6,626	4,750	3,914	12,865	10,540	24.7	23.7
1966.....	9,283	7,163	5,807	4,693	15,090	11,856	26.0	24.9
1967.....	9,448	7,017	5,874	4,823	15,322	11,840	24.7	24.2
1968.....	10,136	7,166	5,542	4,579	15,678	11,745	—	—
1969.....	11,034	—	6,012	—	17,046	—	—	—

Increases in capital spending are planned in almost all major sectors of the economy in 1969. Plans of business involve a rise of almost 8 p.c. in outlays over those of 1968. Social capital spending by institutions and government departments is also expected to increase by nearly 8 p.c., while outlays for housing are likely to be more than 12 p.c. greater than those of the preceding year.

The most important change from trends in recent years is in the business sector where the increase of 8 p.c. now planned follows two consecutive years of decline in business investment. The gains expected in social capital spending in 1969 are little different from those that occurred in 1968, while the 12-p.c. rise in outlays for housing is considerably less than the pronounced increase of 21 p.c. recorded in the preceding year.

The breakdown of capital spending plans by region reveals that in each major region in Canada outlays in 1969 will be larger than those occurring in 1968. These increases range from 3 p.c. in Quebec and the Prairie Provinces and 7 p.c. in British Columbia to 11 p.c. in the Atlantic Provinces and almost 16 p.c. in Ontario. Within the Atlantic and Prairie regions considerable variations exist among the individual provinces. Present plans suggest that there will be some decline in investment in Prince Edward Island while that in New Brunswick is likely to increase by 21 p.c. with lesser increases in Nova Scotia and Newfoundland. Similarly in the Prairies, capital spending in Saskatchewan is expected to be 8 p.c. below the 1968 level but increases of 7 p.c. and 9 p.c., respectively, are planned in Manitoba and Alberta.

The spending sectors that contribute to the expected strengths and weaknesses vary considerably from region to region. The only area of investment likely to rise significantly in all regions, and indeed in all provinces, is house-building. In Ontario and the Atlantic Provinces, the regions where the most rapid growth is expected, significant increases are planned in business investment—more than 20 p.c. in Ontario and over 10 p.c. in the Atlantic region; a more moderate rate of 5 p.c. is planned in British Columbia but in Quebec and the Prairie Provinces such investment is expected to remain at about the 1968 level. Within business investment a substantial increase in the construction of stores and other commercial buildings is expected in all regions except Quebec. In the Atlantic Provinces this is supplemented by a rising level of expenditures for utilities, particularly electric power facilities. In Ontario, too, utilities investment is expected to be substantially higher but the major impetus to business investment in that province comes from sharply expanded capital plans by manufacturers. In British Columbia, in addition to the strength in commercial construction, manufacturing investment is expected to increase significantly.

The lack of growth during 1969 in business investment in the Prairies results from reduced capital spending in the commodity-producing industries which offset increases in commercial construction and utilities. In Quebec, no significant increases or declines are planned in any of the major categories of business investment.

Social capital outlays are expected to increase most sharply in regions where business investment is showing little growth. Such outlays are likely to rise by 14 p.c. in the Prairies, 12 p.c. in British Columbia and 8 p.c. in Quebec. In both Ontario and the Atlantic Provinces, social capital spending for institutions and government facilities are expected to be only slightly greater than in 1968.

2.—Summary of Capital and Repair Expenditures, by Economic Sector, 1967-69

NOTE.—Actual expenditures 1967; preliminary actual 1968; intentions 1969.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
Agriculture and fishing.....1967	255	860	1,115	99	219	318	354	1,079	1,433
1968	254	765	1,019	99	230	329	353	995	1,348
1969	253	767	1,020	98	232	330	351	999	1,350
Forestry.....1967	38	48	86	19	51	70	57	99	156
1968	43	41	84	17	47	64	60	88	148
1969	48	52	100	18	47	65	66	99	165
Mining, quarrying and oil wells.....1967	762	289	1,051	72	188	260	834	477	1,311
1968	742	298	1,040	83	226	309	825	524	1,349
1969	751	269	1,020	86	226	312	837	495	1,332
Manufacturing.....1967	677	1,857	2,534	180	976	1,156	857	2,833	3,690
1968	584	1,634	2,218	178	981	1,159	762	2,615	3,377
1969	619	1,921	2,540	194	1,008	1,202	813	2,929	3,742
Utilities.....1967	1,748	1,397	3,145	347	672	1,019	2,095	2,069	4,164
1968	1,856	1,412	3,268	339	644	983	2,195	2,056	4,251
1969	1,977	1,489	3,466	365	683	1,048	2,342	2,172	4,514
Construction industry.....1967	14	230	244	6	200	206	20	430	450
1968	14	240	254	5	180	185	19	420	439
1969	15	250	265	6	210	216	21	460	481
Housing.....1967	2,352	—	2,352	713	—	713	3,065	—	3,065
1968	2,844	—	2,844	729	—	729	3,573	—	3,573
1969	3,200	—	3,200	772	—	772	3,972	—	3,972
Trade (wholesale and retail).....1967	205	337	542	65	74	139	270	411	681
1968	218	306	524	64	72	126	272	378	650
1969	280	332	612	58	76	134	338	408	746
Finance, insurance and real estate.....1967	417	81	498	28	11	39	445	92	537
1968	384	87	471	29	11	40	413	98	511
1969	425	85	510	28	11	39	453	96	549
Commercial services.....1967	142	352	494	23	71	94	165	423	588
1968	105	349	454	26	70	96	131	419	550
1969	145	416	561	21	82	103	166	498	664
Institutional services.....1967	1,107	208	1,315	88	25	113	1,195	233	1,428
1968	1,201	214	1,415	96	25	121	1,297	239	1,536
1969	1,287	233	1,520	105	27	132	1,392	260	1,652
Government departments.....1967	1,731	215	1,946	505	68	573	2,236	283	2,519
1968	1,891	196	2,087	451	75	526	2,342	271	2,613
1969	2,034	198	2,232	477	73	550	2,511	271	2,782
Totals.....1967	9,448	5,874	15,322	2,145	2,555	4,700	11,593	8,429	20,022
1968	10,136	5,542	15,678	2,106	2,561	4,667	12,242	8,103	20,345
1969	11,034	6,012	17,046	2,228	2,675	4,903	13,262	8,687	21,949

It should be noted that, in the smaller provinces in particular, individual projects or special conditions in one segment of industry may have an important bearing on the year-to-year trend in total investment. For example, declining outlays for potash mines account for most of the reduction in Saskatchewan investment while the increased strength in Alberta stems from an expansion of activity in petroleum and gas fields. If conditions change in such industries as the year progresses or if new projects are started or existing ones postponed or stretched out, actual spending in individual provinces may vary markedly from present plans.

Details of some of the above economic sectors are given in Table 3. The value of construction work performed, together with statistics of contracts awarded and building permits issued in recent years, is covered in Section 2 of this Chapter. Housing is treated separately in Section 3.

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1967-69

NOTE.—Actual expenditures 1967; preliminary actual 1968; intentions 1969.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
MANUFACTURING									
Food and beverages.....1967	73.7	180.7	254.4	20.0	90.5	110.5	93.7	271.2	364.9
1968	77.0	154.4	231.4	17.9	88.4	106.3	94.9	242.8	337.7
1969	81.4	170.1	251.5	19.8	86.6	106.4	101.2	256.7	357.9
Tobacco products.....1967	4.1	10.3	14.4	1.7	3.8	5.5	5.8	14.1	19.9
1968	4.0	8.8	12.8	2.2	5.2	7.4	6.2	14.0	20.2
1969	3.4	9.0	12.4	2.6	5.7	8.3	6.0	14.7	20.7
Rubber.....1967	5.5	23.6	29.1	2.4	18.5	20.9	7.9	42.1	50.0
1968	8.3	24.5	32.8	2.6	18.7	21.3	10.9	43.2	54.1
1969	9.7	45.2	54.9	2.8	21.0	23.8	12.5	66.2	78.7
Leather.....1967	1.8	4.7	6.5	0.9	4.6	5.5	2.7	9.3	12.0
1968	2.1	5.4	7.5	1.1	4.6	5.7	3.2	10.0	13.2
1969	1.5	4.6	6.1	1.0	4.4	5.4	2.5	9.0	11.5
Textile.....1967	17.8	56.4	74.2	6.4	31.5	37.9	24.2	87.9	112.1
1968	11.2	46.2	57.4	5.0	29.1	34.1	16.2	75.3	91.5
1969	7.5	49.1	56.6	6.0	30.9	36.9	13.5	80.0	93.5
Knitting mills.....1967	0.8	6.9	7.7	0.6	2.3	2.9	1.4	9.2	10.6
1968	1.5	6.9	8.4	0.5	2.4	2.9	2.0	9.3	11.3
1969	2.1	6.6	8.7	0.5	2.2	2.7	2.6	8.8	11.4
Clothing.....1967	2.0	7.4	9.4	0.8	3.6	4.4	2.8	11.0	13.8
1968	2.6	6.5	9.1	1.1	3.5	4.6	3.7	10.0	13.7
1969	2.8	6.0	8.8	0.9	3.5	4.4	3.7	9.5	13.2
Wood.....1967	15.6	45.9	61.5	10.3	56.7	67.0	25.9	102.6	128.5
1968	17.4	42.7	60.1	10.1	53.2	63.3	27.5	95.9	123.4
1969	24.6	74.7	99.3	10.0	53.7	63.7	34.6	128.4	163.0
Furniture and fixtures.....1967	10.2	9.6	19.8	1.8	3.9	5.7	12.0	13.5	25.5
1968	8.4	9.6	18.0	1.6	4.1	5.7	10.0	13.7	23.7
1969	4.3	8.7	13.0	2.1	4.2	6.3	6.4	12.9	19.3
Paper and allied industries..1967	111.2	357.1	468.3	12.6	174.6	187.2	123.8	531.7	655.5
1968	63.9	244.8	308.7	13.2	160.8	174.0	77.1	405.6	482.7
1969	59.5	271.9	331.4	14.3	169.7	184.0	73.8	441.6	515.4
Printing, publishing and allied industries. 1967	9.9	36.1	46.0	3.8	10.8	14.6	13.7	46.9	60.6
1968	10.2	36.4	46.6	3.2	10.3	13.5	13.4	46.7	60.1
1969	5.2	34.1	39.3	3.2	10.8	14.0	8.4	44.9	53.3
Primary metals.....1967	82.0	202.8	284.8	25.0	258.1	283.1	107.0	460.9	567.9
1968	76.6	176.6	253.2	25.5	274.8	300.3	102.1	451.4	553.5
1969	96.1	286.6	382.7	26.2	274.0	300.2	122.3	560.6	682.9

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1967-69—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
MANUFACTURING—concluded									
Metal fabricating.....1967	28.2	84.5	112.7	8.7	43.2	51.9	36.9	127.7	164.6
1968	19.3	91.4	110.7	7.5	41.8	49.3	26.8	133.2	160.0
1969	18.8	97.4	116.2	7.9	42.2	50.1	26.7	139.6	166.3
Machinery.....1967	18.9	40.3	59.2	4.3	18.7	23.0	23.2	59.0	82.2
1968	11.6	38.5	50.1	4.2	17.0	21.2	15.8	55.5	71.3
1969	14.3	52.9	67.2	5.1	18.5	23.6	19.4	71.4	90.8
Transportation equipment....1967	56.4	136.3	192.7	9.3	51.1	60.4	65.7	187.4	253.1
1968	34.7	98.4	133.1	9.8	60.0	69.8	44.5	158.4	202.9
1969	38.0	157.8	195.8	11.0	59.8	70.8	49.0	217.6	266.6
Electrical products.....1967	26.4	70.1	96.5	6.6	31.1	37.7	33.0	101.2	134.2
1968	15.5	59.1	74.6	6.2	28.4	34.6	21.7	87.5	109.2
1969	18.7	76.4	95.1	6.6	29.9	36.5	25.3	106.3	131.6
Non-metallic mineral prod-1967	40.9	78.9	119.8	9.4	63.9	73.3	50.3	142.8	193.1
ucts. 1968	18.3	59.4	77.7	6.7	68.8	75.5	25.0	128.2	153.2
1969	24.9	75.4	100.3	6.8	69.7	76.5	31.7	145.1	176.8
Petroleum and coal products1967	78.8	21.4	100.2	36.0	10.2	46.2	114.8	31.6	146.4
1968	97.5	30.0	127.5	42.6	9.8	52.4	140.1	39.8	179.9
1969	146.8	32.8	179.6	43.2	11.3	54.5	190.0	44.1	234.1
Chemical and chemical1967	78.7	191.6	270.3	15.5	85.4	100.9	94.2	277.0	371.2
products. 1968	86.7	220.5	307.2	13.1	86.6	99.7	99.8	307.1	406.9
1969	40.8	153.5	194.3	20.7	96.6	117.3	61.5	250.1	311.6
Miscellaneous.....1967	14.1	34.4	48.5	3.5	13.8	17.3	17.6	48.2	65.8
1968	17.0	36.4	53.4	4.2	13.1	17.3	21.2	49.5	70.7
1969	19.1	50.7	69.8	3.6	13.4	17.0	22.7	64.1	86.8
Capital items charged to1967	—	257.5	257.5	—	—	—	—	257.5	257.5
operating expenses. 1968	—	237.7	237.7	—	—	—	—	237.7	237.7
1969	—	257.2	257.2	—	—	—	—	257.2	257.2
Totals, Manufacturing 1967	677.0	1,856.5	2,533.5	179.6	976.3	1,155.9	856.6	2,832.8	3,689.4
1968	583.8	1,634.2	2,218.0	178.3	980.6	1,158.9	762.1	2,614.8	3,376.9
1969	619.5	1,920.7	2,540.2	194.3	1,008.1	1,202.4	813.8	2,928.8	3,742.6
MINING									
Metal mines .....1967	238.1	131.3	369.4	33.4	116.6	150.0	271.5	247.9	519.4
1968	220.7	110.2	330.9	35.6	154.8	190.4	256.3	265.0	521.3
1969	193.0	94.4	287.4	34.4	148.9	183.3	227.4	243.3	470.7
Iron mines.....1967	56.8	48.1	104.9	10.4	55.5	65.9	67.2	103.6	170.8
1968	21.1	24.8	45.9	12.2	79.1	91.3	53.3	103.9	157.2
1969	23.2	16.2	39.4	10.6	71.2	81.7	53.7	87.4	121.1
Other metal mines.....1967	181.3	83.2	264.5	23.0	61.1	84.1	204.3	144.3	348.6
1968	199.6	86.4	286.0	23.4	75.7	99.1	223.0	161.1	384.1
1969	169.8	78.2	248.0	23.9	77.7	101.6	193.7	155.9	349.6
Petroleum and gas ¹.....1967	403.0	71.8	474.8	34.2	14.7	48.9	437.2	86.5	523.7
1968	418.9	51.3	470.2	44.5	24.6	69.1	463.4	75.9	539.3
1969	483.5	89.1	572.6	48.1	26.0	74.1	531.6	115.1	646.7
Other mining ².....1967	121.1	85.4	206.5	4.5	57.0	61.5	125.6	142.4	268.0
1968	102.1	136.6	238.7	3.2	46.5	49.7	105.3	183.1	288.4
1969	74.6	85.9	160.5	4.0	50.9	54.9	78.6	136.8	215.4
Totals, Mining.....1967	762.2	288.5	1,050.7	72.1	188.3	260.4	834.3	476.8	1,311.1
1968	741.7	298.1	1,039.8	83.3	225.9	309.2	875.0	524.0	1,349.0
1969	751.1	269.4	1,020.5	86.5	225.8	312.3	837.6	495.2	1,332.8

¹ Includes expenditures on facilities related to petroleum and gas wells and extraction of petroleum from shales or sands, natural gas processing plants and contract drilling for petroleum and gas. ² Includes coal mines, asbestos, gypsum, salt, miscellaneous non-metal (incl. potash) and quarrying.

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1967-69—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
UTILITIES									
Electric power.....1967	875.3	390.8	1,266.1	59.8	41.1	100.9	935.1	431.9	1,367.0
1968	959.2	433.0	1,392.2	71.0	47.0	118.0	1,030.2	480.0	1,510.2
1969	1,000.3	520.8	1,521.1	82.0	54.4	136.4	1,082.3	575.2	1,657.5
Gas distribution.....1967	58.5	17.9	76.4	6.8	2.7	9.5	65.3	20.6	85.9
1968	86.4	29.5	115.9	8.5	2.8	11.3	94.9	32.3	127.2
1969	75.4	31.7	107.1	9.3	2.5	11.8	84.7	34.2	118.9
Railway transport.....1967	181.9	152.7	334.6	149.3	238.4	387.7	331.2	391.1	722.3
1968	145.6	121.4	267.0	144.1	192.5	336.6	289.7	313.9	603.6
1969	182.2	128.6	310.8	150.9	200.1	351.0	333.1	328.7	661.8
Urban transit systems.....1967	44.4	32.0	76.4	7.6	23.8	31.4	52.0	55.8	107.8
1968	16.9	11.7	28.6	5.1	23.9	29.0	22.0	35.6	57.6
1969	30.7	23.9	54.6	4.7	25.2	29.9	35.4	49.1	84.5
Water transport and services.....1967	43.2	54.5	97.7	13.4	23.5	36.9	56.6	78.0	134.6
1968	41.9	57.5	99.4	10.1	21.7	31.8	52.0	79.2	131.2
1969	70.5	52.4	122.9	11.2	19.4	30.6	81.7	71.8	153.5
Motor transport.....1967	8.9	66.0	74.9	3.3	82.6	85.9	12.2	148.6	160.8
1968	10.9	65.3	76.2	2.2	80.3	82.5	13.1	145.6	158.7
1969	12.0	62.5	74.5	2.1	82.2	84.3	14.1	144.7	158.8
Grain elevators.....1967	34.9	6.6	41.5	7.6	3.3	10.9	42.5	9.9	52.4
1968	27.5	6.2	33.7	5.8	3.0	8.8	33.3	9.2	42.5
1969	12.8	4.7	17.5	5.0	2.8	7.8	17.8	7.5	25.3
Telephones, telegraph and cable systems.....1967	194.2	398.0	592.2	60.1	162.0	222.1	254.3	560.0	814.3
1968	220.4	407.5	627.9	55.3	174.6	229.9	275.7	582.1	857.8
1969	230.5	402.1	632.6	59.9	190.2	250.1	290.4	592.3	882.7
Broadcasting.....1967	7.1	26.0	33.1	1.3	5.0	6.3	8.4	31.0	39.4
1968	7.4	25.0	32.4	1.1	4.5	5.6	8.5	29.5	38.0
1969	15.7	19.4	35.1	0.9	4.5	5.4	16.6	23.9	40.5
Water systems.....1967	100.4	4.2	104.6	23.6	2.5	26.1	124.0	6.7	130.7
1968	99.5	4.0	103.5	25.1	2.5	27.6	124.6	6.5	131.1
1969	128.0	6.9	134.9	27.9	2.8	30.7	155.9	9.7	165.6
Other utilities ¹.....1967	198.9	221.9	420.8	14.5	87.4	101.9	213.4	309.3	522.7
1968	240.1	225.0	465.1	10.7	91.1	101.8	250.8	316.1	566.9
1969	218.4	208.5	426.9	11.5	98.6	110.1	229.9	307.1	537.0
Capital items charged to operating expenses.....1967	—	26.6	26.6	—	—	—	—	26.6	26.6
1968	—	26.4	26.4	—	—	—	—	26.4	26.4
1969	—	27.9	27.9	—	—	—	—	27.9	27.9
Totals, Utilities.....1967	1,747.7	1,397.2	3,144.9	347.3	672.3	1,019.6	2,095.0	2,069.5	4,164.5
1968	1,855.8	1,412.5	3,268.3	339.0	643.9	982.9	2,194.8	2,056.4	4,251.2
1969	1,976.5	1,489.4	3,465.9	365.4	682.7	1,048.1	2,341.9	2,172.1	4,514.0
TRADE									
Wholesale.....1967	49.6	59.1	108.7	11.2	17.3	28.5	60.8	76.4	137.2
1968	57.3	54.3	111.6	9.7	17.8	27.5	67.0	72.1	139.1
1969	71.0	64.5	135.5	10.4	17.7	28.1	81.4	82.2	163.6
Chain stores.....1967	30.8	63.8	94.6	8.8	12.7	21.5	39.6	76.5	116.1
1968	38.4	62.0	100.4	7.7	10.7	18.4	46.1	72.7	118.8
1969	40.8	64.1	104.9	7.8	12.9	20.7	48.6	77.0	125.6
Independent stores.....1967	46.3	110.2	156.5	21.5	18.4	39.9	67.8	128.6	196.4
1968	51.1	95.7	146.8	14.3	16.5	30.8	65.4	112.2	177.6
1969	62.4	104.5	166.9	15.5	18.2	33.7	77.9	122.7	200.6
Department stores.....1967	22.2	28.9	51.1	7.2	5.2	12.4	29.4	34.1	63.5
1968	16.6	30.4	47.0	6.2	4.8	11.0	22.8	35.2	58.0
1969	26.4	29.2	55.6	6.7	4.3	11.0	33.1	33.5	66.6
Automotive trade.....1967	56.6	44.3	100.9	15.9	20.9	36.8	72.5	65.2	137.7
1968	54.5	36.1	90.6	16.3	21.9	38.2	70.8	58.0	128.8
1969	79.4	39.9	119.3	17.8	22.6	40.4	97.2	62.5	159.7
Capital items charged to operating expenses.....1967	—	30.5	30.5	—	—	—	—	30.5	30.5
1968	—	28.0	28.0	—	—	—	—	28.0	28.0
1969	—	30.2	30.2	—	—	—	—	30.2	30.2
Totals, Trade.....1967	205.5	336.8	542.3	64.6	74.5	139.1	270.1	411.3	681.4
1968	217.9	306.5	524.4	54.2	71.7	125.9	272.1	378.2	650.3
1969	280.0	332.4	612.4	58.2	75.7	133.9	338.2	408.1	746.3

¹ Includes air transport, warehousing, oil and gas pipelines, and toll highways and bridges.

3.—Capital and Repair Expenditures for Certain Economic Sectors, 1967-69—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
INSTITUTIONS									
Churches.....1967	42.1	4.6	46.7	7.5	1.2	8.7	49.6	5.8	55.4
1968	31.0	3.3	34.3	7.4	0.9	8.3	38.4	4.2	42.6
1969	31.2	4.1	35.3	6.6	0.7	7.3	37.8	4.8	42.6
Universities.....1967	259.3	59.1	318.4	12.1	2.6	14.7	271.4	61.7	333.1
1968	276.6	63.2	339.8	15.1	2.2	17.3	291.7	65.4	357.1
1969	307.0	61.6	368.6	17.8	2.7	20.5	324.8	64.3	389.1
Schools.....1967	607.1	82.1	689.2	37.3	8.8	46.1	644.4	90.9	735.3
1968	674.0	84.7	758.7	38.9	9.6	48.5	712.9	94.3	807.2
1969	665.0	88.4	753.4	43.7	10.2	53.9	708.7	98.6	807.3
Hospitals.....1967	179.5	60.0	239.5	29.5	11.6	41.1	209.0	71.6	280.6
1968	197.7	60.0	257.7	32.3	12.1	44.4	230.0	72.1	302.1
1969	262.2	76.1	338.3	35.1	13.0	48.1	297.3	89.1	386.4
Other institutional services ¹.....1967	19.1	2.5	21.6	2.0	0.7	2.7	21.1	3.2	24.3
1968	22.0	2.9	24.9	2.1	0.7	2.8	24.1	3.6	27.7
1969	21.3	3.1	24.4	1.4	0.7	2.1	22.7	3.8	26.5
Totals, Institutions.....1967	1,107.1	208.3	1,315.4	88.4	24.9	113.3	1,195.5	233.2	1,428.7
1968	1,201.3	214.1	1,415.4	95.8	25.5	121.3	1,297.1	239.6	1,536.7
1969	1,286.7	233.3	1,520.0	104.6	27.3	131.9	1,391.3	260.6	1,651.9
FINANCE									
Banks.....1967	22.9	18.4	41.3	6.4	4.9	11.3	29.3	23.3	52.6
1968	25.7	20.2	45.9	7.4	4.5	11.9	33.1	24.7	57.8
1969	36.5	24.0	60.5	6.4	5.1	11.5	42.9	29.1	72.0
Insurance, trust and loan companies.....1967	36.2	27.7	63.9	3.3	1.8	5.1	39.5	29.5	69.0
1968	16.4	50.8	47.2	2.7	1.8	4.5	19.1	32.6	51.7
1969	33.1	21.1	54.2	2.5	1.6	4.1	35.6	22.7	58.3
Other finance ².....1967	357.7	34.9	392.6	17.9	4.2	22.1	375.6	39.1	414.7
1968	342.2	36.4	378.6	18.7	4.4	23.1	360.9	40.8	401.7
1969	355.7	39.9	395.6	18.9	4.4	23.3	374.6	44.3	418.9
Totals, Finance.....1967	416.8	81.0	497.8	27.6	10.9	38.5	444.4	91.9	536.3
1968	384.3	87.4	471.7	28.8	10.7	39.5	413.1	98.1	511.2
1969	425.3	85.0	510.3	27.8	11.1	38.9	453.1	96.1	549.2
COMMERCIAL SERVICES									
Laundries and dry cleaners.....1967	1.7	10.7	12.4	1.3	4.7	6.0	3.0	15.4	18.4
1968	3.2	8.0	11.2	1.3	4.1	5.4	4.5	12.1	16.6
1969	1.2	7.2	8.4	1.3	3.6	4.9	2.5	10.8	13.3
Motion picture theatres.....1967	2.5	3.5	6.0	2.5	0.6	3.1	5.0	4.1	9.1
1968	0.7	2.5	3.2	2.9	0.7	3.6	3.6	3.2	6.8
1969	1.0	2.1	3.1	2.0	1.0	3.0	3.0	3.1	6.1
Hotels.....1967	37.3	17.9	55.2	13.1	7.9	21.0	50.4	25.8	76.2
1968	36.6	15.5	52.1	12.8	7.8	20.6	49.4	23.3	72.7
1969	51.1	20.5	71.6	12.4	8.4	20.8	63.5	28.9	92.4
Other commercial services ³.....1967	100.6	319.9	420.5	6.5	58.1	64.6	107.1	378.0	485.1
1968	65.1	322.7	387.8	8.5	57.7	66.2	73.6	380.4	454.0
1969	91.9	386.6	478.5	5.4	69.1	74.5	97.3	455.7	553.0
Totals, Commercial Services.....1967	142.1	352.0	494.1	23.4	71.3	94.7	165.5	423.3	588.8
1968	105.6	348.7	454.3	25.5	70.3	95.8	131.1	419.0	550.1
1969	145.2	416.4	561.6	21.1	82.1	103.2	166.3	498.5	664.8

¹ Includes privately operated social and welfare institutions.² Mainly expenditures of real estate companies engaged in developing, owning and leasing properties, and may include outlays for multi-purpose developments with such facilities as theatres, stores, hotel accommodation, etc.³ Includes services to business, certain recreational and personal services and such miscellaneous services as trade and exhibition associations.

A summary of the capital expenditures in each province for the years 1967 to 1969 is given in Table 4. Such expenditures represent gross additions to the capital stocks of the province and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions.

4.—Capital and Repair Expenditures, by Province, 1967-69

NOTE.—Actual expenditures 1967; preliminary actual 1968; intentions 1969.

(Millions of dollars)

Province and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
Newfoundland.....1967	232	127	359	38	72	110	270	199	469
.....1968	295	119	414	44	88	132	339	207	546
.....1969	335	102	437	42	85	127	377	187	564
Prince Edward Island.....1967	29	16	45	8	6	14	37	22	59
.....1968	28	16	44	7	7	14	35	23	58
.....1969	25	13	38	7	6	13	32	19	51
Nova Scotia.....1967	253	210	463	70	64	134	323	274	597
.....1968	276	222	498	61	53	114	337	275	612
.....1969	369	187	556	70	60	130	439	247	686
New Brunswick.....1967	247	130	377	49	61	110	296	191	487
.....1968	218	115	333	51	60	111	269	175	444
.....1969	246	157	403	52	64	116	298	221	519
Quebec.....1967	1,988	1,226	3,214	554	578	1,132	2,542	1,804	4,346
.....1968	2,142	1,159	3,301	534	543	1,077	2,676	1,702	4,378
.....1969	2,217	1,191	3,408	566	569	1,135	2,783	1,760	4,543
Ontario.....1967	3,173	2,184	5,357	756	992	1,748	3,929	3,176	7,105
.....1968	3,435	2,087	5,522	772	1,032	1,804	4,207	3,119	7,326
.....1969	3,906	2,473	6,379	803	1,080	1,883	4,709	3,553	8,262
Manitoba.....1967	450	269	719	108	121	229	558	390	948
.....1968	545	263	808	100	111	211	645	374	1,019
.....1969	624	237	861	104	116	220	728	353	1,081
Saskatchewan.....1967	551	413	964	117	119	236	668	532	1,200
.....1968	563	419	982	109	119	228	672	538	1,210
.....1969	542	360	902	113	128	241	655	488	1,143
Alberta.....1967	1,129	546	1,675	219	200	419	1,348	746	2,094
.....1968	1,253	489	1,742	212	210	422	1,465	699	2,164
.....1969	1,328	562	1,890	233	219	452	1,561	781	2,342
British Columbia, Yukon Territory and Northwest Territories.....1967	1,396	753	2,149	226	342	568	1,622	1,095	2,717
.....1968	1,381	653	2,034	216	338	554	1,597	991	2,588
.....1969	1,442	730	2,172	238	348	586	1,680	1,078	2,758
Canada.....1967	9,448	5,874	15,322	2,145	2,555	4,700	11,593	8,429	20,022
.....1968	10,136	5,542	15,678	2,106	2,561	4,667	12,242	8,103	20,345
.....1969	11,034	6,012	17,046	2,228	2,675	4,903	13,262	8,687	21,949

Section 2.—Construction Statistics

Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures that appear in Section 1. The data represent the estimated total value of all new and repair construction performed by contractors, by labour forces of utility, manufacturing, mining and logging firms, and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 5 shows the value of new and repair construction work performed during the period 1958-67 and Table 6 shows the value of such work performed by contractors and others in the years 1964-67.

5.—Value of New and Repair Construction Work Performed, 1958-67

NOTE.—Actual expenditures 1958-66; preliminary actual 1967.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	p.c.
1958.....	5,831	1,261	7,092	21.6
1959.....	5,710	1,367	7,077	20.3
1960.....	5,454	1,432	6,886	19.0
1961.....	5,518	1,456	6,974	18.7
1962.....	5,787	1,509	7,296	18.1
1963.....	6,157	1,559	7,716	17.8
1964.....	7,004	1,630	8,634	18.2
1965.....	8,114	1,754	9,868	18.9
1966 ¹	9,283	1,954	11,237	19.5
1967.....	9,485	2,038	11,523	—

6.—Value of Construction Work Performed, by Contractors and Others, 1964-67

NOTE.—Actual expenditures 1964-66; preliminary actual 1967.

(Millions of dollars)

Item	1964	1965	1966	1967
Contract Construction	6,833	7,870	9,123	9,287
New.....	5,937	6,904	8,062	8,157
Repair.....	896	966	1,061	1,129
Other Construction¹	1,801	1,998	2,114	2,237
New.....	1,067	1,210	1,221	1,328
Repair.....	734	788	893	909
Totals, Construction	8,634	9,868	11,237	11,523
New.....	7,004	8,114	9,283	9,485
Repair.....	1,630	1,754	1,954	2,038

¹ Work done by the labour forces of utilities, manufacturing, mining and logging firms, government departments, institutions and other persons or firms not primarily engaged in the construction industry.

Table 7 gives estimates of total expenditures in Canada on each type of construction for which information is available.

7.—Value of Construction Work Performed, by Type of Structure, 1966 and 1967

NOTE.—Actual expenditures 1966; preliminary actual 1967.

Type of Structure	1966			1967		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Building Construction						
Residential	2,181,400	661,200	2,842,600	2,351,600	713,100	3,064,700
Industrial	829,657	171,265	1,000,922	693,379	168,764	862,143
Factories, plants, workshops, food canneries.....	673,208	135,077	808,285	549,716	128,814	678,530
Mine and mine mill buildings.....	139,907	16,671	156,578	124,367	19,514	143,881
Railway stations, offices, roadway buildings.....	10,404	12,721	23,125	13,012	13,687	26,699
Railway shops, engine houses, water and fuel stations.....	6,138	6,796	12,934	6,284	6,749	13,033

7.—Value of Construction Work Performed, by Type of Structure, 1966 and 1967—continued

Type of Structure	1966			1967		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Building Construction—concluded						
Commercial	1,089,292	160,605	1,249,897	979,675	159,160	1,138,835
Warehouses, storehouses, refrigerated storage, etc.....	88,576	15,305	103,881	93,395	15,641	109,036
Grain elevators.....	24,893	9,424	34,317	34,435	9,003	43,438
Hotels, clubs, restaurants, cafeterias, tourist cabins.....	102,181	16,971	119,152	78,318	16,287	94,605
Office buildings.....	395,363	58,832	454,195	389,110	55,591	444,701
Stores, retail and wholesale.....	265,155	38,082	303,237	192,988	38,122	231,110
Garages and service stations.....	40,590	12,328	52,918	61,199	14,703	75,902
Theatres, arenas, amusement and recreational buildings.....	170,161	8,011	178,172	128,477	8,503	136,980
Laundries and dry-cleaning establishments.....	2,373	1,652	4,025	1,753	1,310	3,063
Institutional	1,080,205	90,361	1,170,566	1,279,746	100,885	1,380,631
Schools and other educational buildings.....	757,106	43,765	800,871	890,184	51,472	941,656
Churches and other religious buildings.....	47,474	7,562	55,036	46,941	7,275	54,216
Hospitals, sanatoria, clinics, first-aid stations, etc.....	186,090	24,231	210,321	227,111	30,461	257,572
Other.....	89,535	14,803	104,338	115,510	11,677	127,187
Other Building	297,348	99,491	396,839	315,257	97,799	413,056
Farm buildings (excluding dwellings).....	171,392	62,593	233,985	176,589	64,140	240,729
Broadcasting, radio and television, relay and booster stations, telephone exchanges.....	35,353	3,968	39,321	35,523	3,581	39,104
Aeroplane hangars.....	1,780	3,305	5,085	7,190	2,353	9,543
Passenger terminals, bus, boat or air.....	26,515	1,147	27,662	19,880	1,329	21,209
Armouries, barracks, drill halls, etc.....	6,140	12,489	18,629	7,564	10,137	17,701
Bunkhouses, dormitories, camp cookeries, bush depots and camps.....	13,021	4,065	17,086	11,267	5,117	16,384
Miscellaneous.....	43,147	11,924	55,071	57,244	11,142	68,386
Totals, Building Construction	5,477,902	1,182,922	6,660,824	5,619,657	1,239,708	6,859,365
Engineering Construction						
Marine	103,636	26,397	130,033	95,312	23,025	118,337
Docks, wharves, piers, breakwaters.....	60,133	9,662	69,795	59,093	10,547	69,640
Retaining walls, embankments, riprapping.....	8,448	4,477	12,925	5,339	458	5,797
Canals and waterways.....	24,667	6,894	31,561	19,447	1,728	21,175
Dredging and pile driving.....	3,396	3,895	7,291	3,402	5,510	8,912
Dyke construction.....	839	318	1,157	1,025	271	1,296
Logging booms.....	681	752	1,433	330	728	1,058
Other.....	5,472	369	5,841	6,676	3,783	10,459
Road, Highway and Aerodrome ...	946,399	283,746	1,230,145	927,100	289,474	1,216,574
Hard surfaced or paved streets, highways, parking lots, etc.....	600,550	155,715	756,265	616,295	184,572	800,867
Gravel or stone streets, highways, roads, parking lots, etc.....	219,521	77,760	297,281	165,669	60,462	226,131
Dirt, clay or other streets, roads, parking lots, etc.....	51,297	22,907	74,204	66,932	21,033	87,965
Grading, scraping, oiling, filling....	40,884	17,951	58,835	42,007	13,112	55,119
Sidewalks, paths.....	18,718	5,741	24,459	16,394	7,516	23,910
Aerodromes, landing fields, runways, tarmac.....	15,449	3,672	19,121	19,803	2,779	22,582
Waterworks and Sewerage Systems	339,374	65,855	405,229	312,216	64,679	376,895
Tile drains, drainage ditches, storm sewers.....	29,261	11,423	40,684	32,199	8,790	40,989

7.—Value of Construction Work Performed, by Type of Structure, 1966 and 1967—concluded

Type of Structure	1966			1967		
	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Engineering Construction—concluded						
Waterworks and Sewerage Systems—concluded						
Water mains, hydrants and services.....	110,552	27,807	138,359	95,502	26,657	122,159
Sewerage systems and connections.....	160,667	22,779	183,446	158,658	25,297	183,955
Pumping stations, water.....	30,230	2,699	32,929	21,578	2,807	24,385
Water storage tanks.....	8,664	1,147	9,811	4,279	1,128	5,407
Dams and Irrigation.....	221,376	11,729	233,105	178,976	11,100	190,076
Dams and reservoirs.....	185,016	3,118	188,134	149,188	2,577	151,765
Irrigation and land reclamation projects.....	36,360	8,611	44,971	29,788	8,523	38,311
Electric Power.....	675,349	67,103	742,452	837,194	70,642	907,836
Electric power generating plants, including water conveying and controlling structures.....	333,087	16,988	350,075	460,715	22,028	482,743
Electric transformer stations.....	33,257	5,837	39,094	56,841	4,737	61,578
Power transmission and distribution lines, trolley wires.....	285,129	38,883	324,012	300,947	38,479	339,426
Street lighting.....	23,876	5,395	29,271	18,691	5,398	24,089
Railway, Telephone and Telegraph.....	314,574	168,502	483,076	322,682	178,001	500,683
Railway tracks and roadbed.....	130,145	105,653	235,798	155,697	113,433	269,130
Signals and interlockers.....	15,199	9,558	24,757	11,310	11,659	22,969
Telegraph and telephone lines, underground and marine cables..	169,230	53,291	222,521	155,675	52,909	208,584
Gas and Oil Facilities.....	614,709	72,611	687,320	665,580	83,048	748,628
Gas mains and services.....	60,594	5,506	66,100	55,223	6,003	61,226
Pumping stations, oil.....	5,000	470	5,470	13,785	2,085	15,870
Pumping stations, gas.....	9,574	282	9,856	7,265	369	7,634
Oil storage tanks.....	13,131	3,173	16,304	13,476	3,591	17,067
Gas storage tanks.....	5,223	102	5,325	3,520	247	3,767
Oil pipelines.....	67,466	2,983	70,449	74,840	2,141	76,981
Gas pipelines.....	52,522	1,259	53,781	60,664	1,052	61,716
Oil wells.....	224,582	16,267	240,849	211,306	19,426	230,732
Gas wells.....	86,047	5,290	91,337	94,438	6,343	100,781
Oil refinery—processing units ¹	54,694	31,523	86,217	77,366	33,896	111,262
Natural gas cleaning plants.....	35,876	5,756	41,632	53,697	7,895	61,592
Other Engineering.....	589,528	75,683	665,211	526,804	78,219	605,023
Bridges, trestles, culverts, overpasses, viaducts.....	190,578	28,389	218,967	173,015	28,336	201,351
Tunnels and subways.....	67,147	656	67,803	38,265	590	38,855
Incinerators.....	133	52	185	192	57	249
Park systems, landscaping, sodding, etc.....	29,388	4,954	34,342	23,691	5,229	28,920
Swimming pools, tennis courts, outdoor recreation facilities.....	3,180	1,064	4,244	2,397	1,069	3,466
Mineshafts and other below surface workings.....	94,390	4,011	98,401	130,735	4,669	135,404
Fences, snowsheds, signs, guard rails.....	29,703	14,160	43,863	34,145	12,377	46,522
Miscellaneous.....	175,009	22,397	197,406	124,364	25,892	150,256
Totals, Engineering Construction.....	3,804,945	771,626	4,576,571	3,865,864	798,188	4,664,052
Totals, All Construction.....	9,282,847	1,954,548	11,237,395	9,485,521	2,037,896	11,523,417

¹ Includes related structures employed in production of petrochemicals.

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 8. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and

by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

8.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1966 and 1967 with Totals for 1963-67

NOTE.—Actual expenditures 1963-66; preliminary actual 1967. Comparable figures from 1953 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province or Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		\$'000	\$'000	\$'000
Province				
Newfoundland.....1966	15,157	73,614	97,486	256,256
.....1967	15,911	82,597	107,015	281,180
Prince Edward Island.....1966	2,920	13,549	19,266	44,476
.....1967	2,564	12,796	18,797	42,243
Nova Scotia.....1966	22,792	103,644	144,190	314,655
.....1967	21,618	105,046	147,548	319,756
New Brunswick.....1966	17,767	87,363	138,190	282,378
.....1967	16,525	87,167	136,808	282,380
Quebec.....1966	150,198	885,18	1,253,072	2,688,832
.....1967	125,559	830,75c	1,176,685	2,515,510
Ontario.....1966	202,898	1,296,600	1,755,239	3,786,950
.....1967	197,007	1,333,616	1,804,920	3,899,461
Manitoba.....1966	30,061	158,433	217,658	485,234
.....1967	31,516	193,273	255,188	576,873
Saskatchewan.....1966	36,355	204,466	297,802	658,701
.....1967	34,372	220,577	315,423	699,165
Alberta.....1966	59,509	383,463	592,698	1,276,408
.....1967	59,754	399,684	614,297	1,317,341
British Columbia, Yukon Territory and North-west Territories.....1966	62,283	493,119	629,959	1,443,505
.....1967	65,029	541,317	696,261	1,569,508
Totals.....1963	523,909	2,569,877	3,736,494	7,716,011
.....1964	547,377	2,512,089	4,241,373	8,634,189
.....1965	593,093	3,275,806	4,764,920	9,867,919
.....1966	599,940	3,699,433	5,145,560	11,237,395
.....1967	569,855	3,806,831	5,272,942	11,523,417
Employer				
Contractors.....1966	449,870	2,837,248	4,279,340	9,123,023
.....1967	422,790	2,890,921	4,358,313	9,286,702
Utilities.....1966	56,502	363,088	454,556	936,427
.....1967	55,635	388,084	477,276	993,154
Governments.....1966	64,581	333,991	199,581	684,701
.....1967	62,816	350,880	211,406	724,551
Others.....1966	28,987	165,106	212,083	493,244
.....1967	28,614	176,946	225,947	519,010

Subsection 2.—Contracts Awarded and Building Permits Issued

In this Subsection, statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only as far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

9.—Value of Construction Contracts Awarded, 1947-67

(Source: Southam Building Guide)

NOTE.—Figures for the years 1926-46 are given in the corresponding table of the 1962 Year Book, p. 682.

Year	Value of Construction Contracts	Year	Value of Construction Contracts	Year	Value of Construction Contracts
	\$		\$		\$
1947.....	718,137,100	1954.....	2,154,959,200	1961.....	3,220,937,300
1948.....	954,082,400	1955.....	3,183,592,000	1962.....	3,351,717,500
1949 ¹	1,143,547,300	1956.....	3,426,905,500	1963.....	3,685,634,300
1950.....	1,525,764,700	1957.....	2,894,168,100	1964.....	4,413,077,400
1951.....	2,295,499,200	1958.....	3,593,709,200	1965.....	5,243,664,500
1952.....	1,812,177,600	1959.....	3,219,073,300	1966.....	4,949,517,600
1953.....	2,017,060,700	1960.....	3,053,749,500	1967.....	5,041,238,900

¹ Newfoundland included from Apr. 1, 1949.

10.—Value of Construction Contracts Awarded, by Province and Type of Construction, 1966 and 1967

(Source: Southam Building Guide)

Province and Type of Construction	1966	1967	Type of Construction	1966	1967
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	136,500	169,798	Institutional.....	1,073,771	1,120,836
Prince Edward Island.....	9,699	10,560	Churches and religious services.....	38,559	37,998
Nova Scotia.....	120,995	132,618	Hospitals and medical services.....	132,993	142,332
New Brunswick.....	48,628	64,806	Welfare services.....	37,066	38,696
Quebec.....	1,057,345	964,434	Public buildings.....	97,601	142,733
Ontario.....	2,226,828	2,313,438	Schools and colleges.....	767,552	759,077
Manitoba.....	193,240	304,831			
Saskatchewan.....	263,518	246,248	Industrial.....	828,989	507,597
Alberta.....	366,152	317,892	Manufacturing and processing plants.....	696,577	439,329
British Columbia.....	526,613	526,614	Utilities.....	60,182	57,214
Totals.....	4,949,518	5,041,239	Other.....	72,230	11,054
Residential.....	1,409,964	1,586,577	Engineering.....	827,011	1,179,019
Apartment.....	492,079	668,238	Bridges and overpasses.....	62,656	72,654
Residences.....	917,885	918,339	Marine.....	50,313	46,404
Business.....	809,733	647,210	Waterworks and sewerage systems.....	160,870	174,036
Hotels, clubs and restaurants.....	60,931	60,220	Roads and airfields.....	356,651	326,715
Office buildings.....	223,142	213,886	Electric power.....	82,735	479,765
Motor vehicle services.....	32,116	36,995	Transportation.....	17,182	12,288
Stores (wholesale and retail).....	161,454	157,829	Communications.....	3,124	12,073
Personal services.....	3,064	4,073	Gas and oil facilities (distribution).....	5,599	25,559
Miscellaneous business services.....	3,792	2,234	Tunnels and subways.....	44,149	1,097
Recreational (including theatres).....	206,432	71,092	Other.....	43,732	28,428
Warehouses and storage.....	118,852	100,881			

Building Permits.—The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits issued are collected from more than 1,400 municipalities across the country and are available for individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for construction work in 1967 was \$4,067,833,000, an increase of 9.5 p.c. over the 1966 figure. Residential construction as a whole increased by 20.8 p.c., due mainly to a 21.7-p.c. increase in the value of permits issued for new residential construction. Industrial construction decreased 10.3 p.c. and commercial construction 8.1 p.c. but government construction rose 14.2 p.c., resulting in an over-all increase of only 1.0 p.c. for non-residential construction. All provinces recorded increases in 1967 except Newfoundland and Prince Edward Island which declined 8.4 p.c. and 13.4 p.c., respectively. Table 11 shows the value of building permits issued in each of 50 municipalities in 1967 compared with 1966.

11.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 50 Municipalities, 1966 and 1967

NOTE.—Comparable figures from 1956 are given in the corresponding table of previous Year Books beginning with the 1962 edition.

Province and Municipality	1966	1967	Province and Municipality	1966	1967
	\$'000	\$'000		\$'000	\$'000
Newfoundland—			Ontario—concluded		
St. John's.....	26,963	23,894	Oshawa.....	21,420	14,662
Prince Edward Island—			Ottawa.....	127,205	100,063
Charlottetown.....	2,693	3,763	Port Arthur.....	10,324	16,753
Nova Scotia—			Scarborough (Borough).....	88,093	97,527
Halifax.....	28,939	25,510	Toronto.....	217,546	225,352
New Brunswick—			Windsor.....	55,146	43,739
Fredericton.....	12,873	10,031	York North (Borough).....	162,117	206,493
Moncton.....	8,507	14,106	York (Borough).....	12,703	19,888
Saint John.....	5,735	21,485	Manitoba—		
Quebec—			Fort Garry.....		
LaSalle.....	24,798	20,364	St. Boniface.....		
Montreal.....	155,662	173,699	St. James.....	93,621	95,594
Quebec.....	10,573	27,656	Winnipeg.....		
St. Laurent.....	17,988	14,980	Saskatchewan—		
Ste. Foy.....	15,705	24,787	Moose Jaw.....	4,865	2,492
Sept Iles.....	10,303	4,530	Prince Albert.....	10,863	16,161
Sherbrooke.....	10,707	14,658	Regina.....	39,279	38,324
Trois-Rivières.....	7,760	6,576	Saskatoon.....	47,472	57,017
Ontario—			Alberta—		
Brampton.....	8,819	12,144	Calgary.....	114,295	136,719
Burlington.....	27,597	30,772	Edmonton.....	135,407	140,357
Etobicoke (Borough).....	59,000	64,892	Jasper Place.....		
Hamilton.....	58,271	56,399	Lethbridge.....	4,006	12,776
Kitchener.....	33,848	56,638	Medicine Hat.....	3,107	4,942
London.....	48,970	57,589	Red Deer.....	7,990	5,777
London Township.....	1,103	1,423	British Columbia—		
Mississauga.....	70,142	99,620	Burnaby District.....	32,225	36,059
Nepean Township.....	20,296	21,648	Richmond Township.....	13,584	16,460
			Surrey District.....	16,566	18,993
			Vancouver.....	60,928	100,588
			Victoria.....	14,352	20,531

¹ Metropolitan Corporation of Greater Winnipeg, annexation.

² Jasper Place included with Edmonton following

Table 12 shows the value of building permits issued in 19 metropolitan areas across Canada. In 1967 the permits issued in these areas made up 68 p.c. of the total for Canada.

12.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1966 and 1967

Metropolitan Area	1966	1967	Metropolitan Area	1966	1967
	\$'000	\$'000		\$'000	\$'000
St. John's ¹	26,963	23,894	Sudbury.....	12,615	23,506
Halifax.....	37,165	41,851	London.....	50,975	60,270
Saint John.....	11,547	21,951	Windsor.....	60,119	49,097
Quebec.....	63,931	83,573	Winnipeg.....	93,621	95,594
Montreal.....	486,671	500,721	Regina.....	39,279	38,324
Ottawa-Hull.....	166,438	151,307	Saskatoon.....	47,472	57,017
Toronto.....	720,825	813,223	Calgary.....	114,676	137,503
Hamilton.....	100,988	104,505	Edmonton.....	140,656	148,545
Kitchener.....	85,105	91,004	Vancouver.....	210,245	281,014
			Victoria.....	35,449	40,631

¹ Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

13.—Value of Building Permits Issued, by Province, 1966 and 1967 with Totals for 1963-67

NOTE.—Comparable figures from 1952 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

Province and Year	Residential Construction			Non-residential Construction			Total
	New	Repair	Total	Industrial	Commercial	Institutional and Government	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1966	12,145	1,095	13,240	1,661	10,750	10,795	36,446
.....1967	20,353	1,180	21,533	306	3,246	8,297	33,382
Prince Edward Island.....1966	1,136	75	1,211	757	1,870	1,589	5,427
.....1967	1,157	54	1,211	845	1,283	1,361	4,700
Nova Scotia.....1966	23,286	1,768	25,054	8,022	17,679	27,337	78,092
.....1967	23,977	1,839	25,816	30,373	14,916	39,608	110,713
New Brunswick.....1966	13,568	1,970	15,538	4,105	9,642	16,642	45,927
.....1967	13,219	1,505	14,724	3,443	10,786	30,699	59,652
Quebec.....1966	358,895	20,413	379,308	80,286	176,893	105,395	741,882
.....1967	393,505	18,029	411,534	88,896	128,794	144,912	774,136
Ontario.....1966	697,819	30,218	728,037	281,534	330,479	452,802	1,792,852
.....1967	855,401	33,311	888,712	200,868	280,866	515,514	1,885,950
Manitoba.....1966	45,299	2,654	47,953	12,951	25,300	36,109	122,313
.....1967	50,035	2,796	52,831	10,117	38,148	25,051	126,147
Saskatchewan.....1966	51,732	1,831	53,563	16,269	39,663	34,067	143,562
.....1967	63,616	2,174	65,790	18,709	27,066	51,854	163,419
Alberta.....1966	109,531	3,454	112,985	24,729	49,196	143,366	330,276
.....1967	153,696	4,036	157,732	32,579	69,129	131,913	391,353
British Columbia.....1966	204,627	10,485	215,112	43,347	75,254	84,600	418,313
.....1967	272,551	11,210	283,761	38,811	102,777	93,032	518,381
Totals.....1963	1,389,923	72,243	1,462,166	281,048	460,122	619,890	2,823,226
.....1964	1,545,586	69,238	1,614,824	380,842	597,536	674,419	3,267,621
.....1965	1,686,412	70,357	1,756,769	430,324	782,845	839,662	3,809,600
.....1966	1,518,038	73,963	1,592,001	473,661	736,726	912,702	3,715,090
.....1967	1,847,510	76,134	1,923,644	424,947	677,001	1,042,241	4,067,833

The indexes in Table 14 show price changes for materials and labour, the two most important elements affecting the cost of residential and non-residential construction. The impact of changes in other factors, such as productivity and profit margins, is not included.

14.—Price Index Numbers of Building Materials and Index Numbers of Wage Rates, 1958-67

(1949=100)

Year	Prices of Building Materials ¹		Wage Rates in Construction ²
	Residential	Non- residential	
1958.....	127.3	129.8	173.6
1959.....	130.0	131.7	183.4
1960.....	129.2	132.3	195.5
1961.....	128.3	131.1	199.7
1962.....	129.7	131.9	209.7
1963.....	133.9	135.1	214.6
1964.....	142.5	139.6	224.5
1965.....	148.9	146.8	235.5
1966.....	154.4	151.0	254.2
1967.....	159.3	154.2	279.5

¹ SOURCE: Prices Division, Dominion Bureau of Statistics; available monthly in *Prices and Price Indexes* (Catalogue No. 62-002).

² SOURCE: Prices Division, Dominion Bureau of Statistics; based on data from the Labour Standards Branch, Department of Labour.

Section 3.—Housing***Subsection 1.—Government Aid to House-Building**

Federal Assistance.—The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1918 when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as “an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions”. Central Mortgage and Housing Corporation (CMHC), a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation has the authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It also acts as a research agency in fields associated with housing and assists provinces and municipalities in many aspects of urban growth. In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that rightfully belong to other levels of government or that could be borne more effectively by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of approximately 5,500,000 houses have been built since the first covering legislation was enacted; about one third of these were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, the Federal Government is active in many ways.

* Prepared (November 1968) in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

Loan Insurance.—Insured mortgage loans may be made for both home-ownership and for rental housing. They are normally available from approved lenders to individual home-owner applicants, to builders constructing houses for sale or for rent and for some special groups, such as co-operative housing associations and farmers. Insured loans are also available for the purchase, improvement, refinancing or sale of existing home-ownership and rental housing in designated urban renewal areas. Loans for existing housing in other areas are available only to purchasers wishing to occupy and improve such dwellings.

The maximum interest rate on insured loans is governed by a formula which permits the rate to fluctuate in accordance with changing yields on long-term government bonds. Under this arrangement the maximum rate is automatically reviewed each quarter to maintain its level at $2\frac{1}{2}$ p.c. above the bond yield. Lenders may charge less than the prescribed maximum.

Upon application, the borrower pays CMHC a fee of \$35 per unit to help defray expenses incurred in the examination of plans and specifications, in the determination of lending values and in compliance inspections during construction. An approved lender requires evidence that a home owner or home purchaser is providing 5 p.c. of the value of the house from his own resources. For the home owner this equity may be in the form of cash or a combination of cash, land and labour; for the home purchaser it may be in cash or labour. The regulations require that gross debt service—the ratio of repayments of principal and interest plus municipal taxes to the income of the borrower—should not exceed 27 p.c., although instances involving higher ratios may be considered on their merits. The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage; the fee ranges from $1\frac{1}{4}$ p.c. to $2\frac{1}{2}$ p.c. of the loan, according to type of unit and time of mortgage advances.

Loans for new home-ownership may be up to 95 p.c. of the first \$18,000 of lending value plus 70 p.c. of the remainder to a maximum loan of \$18,000. For rental housing, loans may be for 90 p.c. of lending value based on a maximum of \$18,000 per dwelling unit. Loans for existing home-ownership and rental housing in urban renewal areas may be for 85 p.c. of lending value, subject to the same maximum amounts as for new housing. Loans for existing houses outside urban renewal areas may be 95 p.c. of the lending value, up to a maximum amount of \$10,000. The repayment period may be up to 35 years for new home-ownership and rental housing and for existing home-owner dwellings outside urban renewal areas. A maximum period of 25 years applies to existing houses in renewal areas.

Direct Loans.—CMHC may make direct loans for both home-ownership and rental housing where, in the opinion of the Corporation, loans are not available through approved lenders. Loans are made to any eligible home-owner applicant but direct loans to builders are normally subject to a requirement that the houses be pre-sold to satisfactory purchasers. By the end of 1967, direct lending by the Corporation totalled approximately 3,376,000. The amount that may be advanced for this purpose out of the Consolidated Revenue Fund is \$4,600,000,000.

CMHC, with Government approval by Order in Council, may make loans to limited dividend companies and non-profit corporations to assist in financing the construction of low-rental housing projects or in the purchase of existing buildings and their conversion into low-rental housing projects. In addition to self-contained units, developments undertaken may include hostel or dormitory accommodation for the elderly and low-income individuals. Loans may be up to a maximum of 90 p.c. of the lending value established by CMHC. The period for repayment may not exceed the useful life of the project and in any case may not be for more than 50 years. The interest rate is established by Order in Council. Plans and specifications for such projects as well as financing and operating arrangements must be approved by the Corporation.

Since December 1960, the National Housing Act has provided financial assistance for the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a province, municipality or a municipal sewerage corporation for the purpose of assisting in the construction or expansion of a sewage treatment project. The

loan may not exceed two thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. The interest rate is prescribed by the Governor in Council. The agreement covering the project contains a condition whereby 25 p.c. of the loan principal and 25 p.c. of the accrued interest will be forgiven for projects completed to the satisfaction of CMHC on or before Mar. 31, 1970. Where construction is not completed before that date, 25 p.c. of the loan advanced or warrantable by construction progress at that date, plus 25 p.c. of the accrued interest on advances, may be forgiven.

Long-term loans are available to a province or its agency, a municipality or its agency, a hospital, a school board, a university or college, a co-operative association or a charitable corporation for the purpose of assisting in the construction of a student housing project, or the acquisition of existing buildings and their conversion into a student housing project. In all cases the government of the province concerned must approve the loan. CMHC may lend up to 90 p.c. of the project cost, subject to maximum amounts as follows: houses and self-contained apartments \$18,000 per unit, and hostels \$7,000 per person accommodated. The term of the loan may not exceed 50 years. The interest rate is prescribed by the Governor in Council.

Guarantees.—CMHC is authorized to give a limited guarantee to banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to existing houses and apartments. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed \$4,000 for a one-family dwelling or \$4,000 for the first unit of a duplex, semi-detached or multiple-family dwelling, plus \$1,500 for each additional unit. Loans are repayable in monthly instalments over a period not exceeding 10 years at a rate of interest similar to that applicable to home-ownership loans.

Public Housing.—Under the National Housing Act and complementary provincial legislation, the Federal Government and the government of a province may enter into a partnership agreement to build rental housing for families and individuals of low income or purchase and rehabilitate existing housing for this purpose. Projects may include hostel or dormitory accommodation in addition to self-contained units. The Federal Government pays up to 75 p.c. of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Rents for units in federal-provincial projects are related to the tenant's family income and size of family and operating deficits are shared on the same contractual basis as the capital costs.

As an alternative method of producing public housing, the CMHC is empowered to make long-term loans to a province, or to a municipality or public housing agency with the approval of the province, for the provision of housing accommodation. Projects may consist of new construction or existing buildings and include dormitory and hostel accommodation as well as self-contained family units. Loans may be up to 90 p.c. of the total costs as determined by CMHC and for a term as long as 50 years but not in excess of the useful life of the development. The maximum that may be borrowed for a house or for a fully serviced apartment is \$18,000, and for hostels or dormitories \$7,000 for each person accommodated. The interest rate is set by the Governor in Council.

Federal grants may be made covering up to 50 p.c. of losses incurred in the operation of public housing projects, for a period of up to 50 years but not exceeding the useful life of the project.

Urban Renewal.—Federal grants and loans are available under the Act to assist provinces and municipalities undertaking programs of urban renewal. CMHC, with Federal Government approval, may arrange with a municipality to undertake a study to identify blighted areas, determine housing requirements and provide data upon which an orderly program of conservation, rehabilitation and redevelopment can be based. The federal contribution may be as much as 75 p.c. of the cost. The legislation also authorizes federal contributions equal to one half of the costs of preparing an urban renewal scheme.

etting out proposals for urban renewal action, a similar cost-sharing arrangement for the implementation of a scheme, and loans up to two thirds of the provincial or municipal share of the cost of carrying out an urban renewal scheme. Loans may be for 15 years at an interest rate prescribed by the Governor in Council. To encourage the improvement and conservation of housing meeting minimum standards of construction, loans are available for the sale, purchase or refinancing of existing housing in urban renewal areas not designated for demolition.

Land Assembly.—The Federal Government and the government of a province may enter into an agreement to provide for a land assembly project which involves the development of raw land for housing purposes. The Federal Government pays up to 75 p.c. of the cost and the provincial government the remainder. The latter may call upon the municipality concerned to bear a portion of the provincial share. In addition, loans may be made to assist proponents of public housing projects to acquire land for future projects, the maximum loan being 90 p.c. of the cost of acquisition and development.

CMHC Building.—The Corporation may construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include the provision of architectural and engineering designs, the calling of public tenders and the administration of construction contracts—including any necessary on-site surveying and engineering. On such contracts, the Corporation carries out full architectural and engineering inspections.

Research.—CMHC is concerned with building technology in the formulation of standards for housing construction, in the use of suitable materials and in the development of new building techniques. The Corporation has no laboratory facilities but has direct experience of performance in the field and seeks the advice of specialists in various agencies and departments of the Federal Government in such matters. Research into the factors affecting housing is concerned with the measurement of the demand for new housing, the volume of new housing built and the supply of mortgage money for house construction. The Corporation also co-ordinates and publishes statistical information on housing. Funds provided under the National Housing Act support the activities of the Canadian Housing Design Council, the Community Planning Association of Canada and the Canadian Council on Urban and Regional Research.

Other Federal Legislation.—The Farm Credit Act, 1959 provides for federal long-term loan assistance for housing as well as for other farm purposes (see pp. 473-474); the Veterans' Land Act, 1942 provides a form of loan and grant assistance to veterans for housing and other purposes (see p. 329); and the Farm Improvement Loans Act, 1944 (see pp. 471-472) provides for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes. These three statutes are concerned only incidentally with housing.

Provincial Assistance.—All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects and, in addition, most provinces have enacted separate legislation with respect to housing. Details of such assistance may be secured from the provincial government departments listed in the Directory of Sources of Official Information included in Chapter XXVII under the heading of "Housing".

Subsection 2.—Housing Activities, 1967-68

Following the low levels of production of 1966 and faced with an uncertain economic outlook, house building in 1967 rebounded with a volume of residential construction in excess of any previous year. Construction was started on 164,123 self-contained family housing units or 29,649 units more than in 1966. Activity in the more specialized field of hostel accommodation provided additional facilities under the National Housing Act for some 11,000 elderly persons and students, an advance of 83.4 p.c. over the previous year.

The greater flexibility of the National Housing Act interest rate, the active return of the chartered banks to mortgage lending, and some easing in the capital market were among the leading factors that combined to produce the largest annual increase of house construction in nine years. Another reason for the accelerated activity was a massive investment of Federal Government funds in direct support of the private mortgage market and its assistance to widely varying housing programs. More than \$1,000,000,000—the largest annual amount in the history of federal participation in housing—was committed to the up-grading of quantity and quality of housing stock and toward improving urban environment. In that year, too, much more stress was placed on the social purpose of housing.

House-building during the first nine months of 1968 continued at an accelerated rate, indicating starts in excess of 190,000 for the year, or 25,000 more than in 1967. There was greatly increased activity on the part of the approved lenders—loans aggregating \$649,927,000 had been approved, related to the construction of 48,875 new units; for the same period of 1967, the totals were \$265,450,000 and 20,542 units.

CMHC direct lending in the private sector during the first nine months of 1968 was considerably less than in 1967, reflecting the Federal Government's policy of directing its major effort toward the provision of social housing. By the end of September direct lending amounted to \$213,871,000 for 13,335 units; comparable figures for 1967 were \$614,676,000 for 39,952 units.

15.—Dwelling Units Started and Completed, by Type of Financing, 1958-67 and by Region, 1966 and 1967

(Exclusive of the Yukon and Northwest Territories)

Year and Region	Dwelling Units Started					Dwelling Units Completed
	National Housing Act		Conventional Institutional Loans	All Other Financing	Total	
	CMHC Loans	Approved Lenders Loans				
	No.	No.	No.	No.	No.	No.
1958.....	35,781	44,533	42,929	41,389	164,632	146,686
1959.....	35,229	26,596	45,198	34,322	141,345	145,671
1960.....	13,788	18,923	40,116	36,031	108,858	123,757
1961.....	23,852	35,334	38,316	28,075	125,577	115,608
1962.....	15,479	31,790	54,214	28,612	130,095	126,682
1963.....	21,213	28,505	71,983	26,923	148,624	128,191
1964.....	28,728	26,118	85,090	25,722	165,658	150,963
1965.....	30,091	24,172	88,669	23,633	166,565	153,037
1966.....	37,483	12,438	55,208	29,345	134,474	162,192
1967.....	41,814	20,829	64,683	36,797	164,123	149,242
1966						
Atlantic Provinces.....	1,519	188	2,964	3,345	8,016	8,466
Quebec.....	11,636	810	17,893	5,572	35,911	40,412
Ontario.....	12,112	10,180	19,746	10,317	52,355	68,407
Prairie Provinces.....	7,410	936	5,942	6,151	20,439	22,963
British Columbia.....	4,806	324	8,663	3,960	17,753	21,944
1967						
Atlantic Provinces.....	1,897	421	2,337	3,725	8,380	7,410
Quebec.....	9,564	3,143	16,886	8,125	37,718	39,108
Ontario.....	18,229	14,951	25,835	9,106	68,121	58,278
Prairie Provinces.....	6,895	1,769	7,686	9,454	25,804	22,720
British Columbia.....	5,229	545	11,939	6,387	24,100	21,726

16. — Dwelling Units Started in Metropolitan and Major Urban Areas, 1966 and 1967

Area	Population (Census 1966)	Dwelling Units Started					
		1966	1967				
			Total	Single De- tached	Semi- detached and Duplex	Row	Apartment
	'000	No.	No.	No.	No.	No.	No.
Metropolitan Areas—							
Calgary.....	331	3,304	3,833	2,215	504	—	1,114
Edmonton.....	401	3,746	6,111	1,908	74	411	3,718
Halifax.....	198	1,133	997	329	144	—	524
Hamilton.....	449	4,201	5,508	2,358	28	404	2,718
Kitchener.....	192	2,432	3,198	1,140	248	259	1,551
London.....	207	1,936	2,812	951	143	363	1,355
Montreal.....	2,437	24,531	25,418	4,406	2,296	657	18,059
Ottawa-Hull.....	495	4,436	3,708	1,667	248	979	814
Quebec.....	413	3,373	2,841	1,519	104	—	1,218
Regina.....	131	977	1,144	545	72	—	527
Saint John.....	101	372	330	238	24	—	68
St. John's.....	101	1,023	1,213	577	186	4	446
Saskatoon.....	116	1,275	2,153	800	344	—	1,009
Sudbury.....	117	394	884	381	54	264	185
Toronto.....	2,159	22,155	32,038	6,789	2,067	1,970	21,212
Vancouver.....	892	9,138	13,896	5,980	348	208	7,360
Victoria.....	174	1,613	1,464	831	58	—	575
Windsor.....	212	1,365	1,290	682	2	126	480
Winnipeg.....	509	2,992	3,216	1,298	190	305	1,423
Totals, Metropolitan Areas.....	9,635	90,396	112,054	34,614	7,134	5,950	64,356
Major Urban Areas—							
Brampton.....	45	955	799	477	78	64	180
Brantford.....	62	431	494	345	4	—	145
Chicoutimi-Jonquière.....	109	254	395	309	18	3	65
Drummondville.....	43	200	182	134	8	—	40
Fort William-Port Arthur.....	98	476	376	299	6	—	71
Guelph.....	51	504	948	305	42	—	601
Kingston.....	71	651	384	276	44	—	64
Moncton.....	60	406	436	262	20	—	154
Niagara Falls.....	61	399	667	344	14	74	235
Oshawa.....	100	991	814	370	99	—	345
Peterborough.....	56	247	400	208	20	27	145
St. Catharines.....	109	1,060	1,401	623	126	110	542
St. Jean.....	43	203	182	137	18	—	27
St. Jérôme.....	33	204	181	145	8	—	28
Sarnia.....	67	693	717	308	6	98	305
Sault Ste. Marie.....	75	414	456	345	22	20	69
Shawinigan.....	65	50	67	58	—	3	6
Sherbrooke.....	80	413	597	190	26	—	381
Sydney-Glace Bay.....	106	198	366	290	—	72	4
Timmins.....	40	69	69	48	6	15	—
Trois-Rivières.....	95	363	386	249	12	3	122
Valleyfield.....	34	302	180	106	44	—	30
Welland.....	59	287	428	236	56	—	136
Totals, Major Urban Areas.....	1,562	9,770	10,925	6,064	677	499	3,695
All other.....	8,775	34,308	41,144	31,856	2,128	953	6,207
Canada¹.....	19,972	134,474	164,123	72,534	9,939	7,392	74,258

¹ Excludes the Yukon and Northwest Territories.

Operations under the National Housing Act.—NHA mortgage loans amounting to \$1,014,833,000 were approved in 1967 for the provision of 68,945 dwellings, compared with loans of \$671,280,000 approved for 46,366 dwellings in 1966. Direct lending by CMHC surpassed the volume of insured loans by approved lenders operating under the Act: loans by the federal agency had a value of \$673,874,000 against \$671,280,000 in 1966. Loans made available through private lenders in 1967 amounted to \$355,793,000 for 27,154 dwellings. Trust companies remained the largest source of private funds, approving loans

for 12,979 units; insurance company loans represented 6,594 dwellings; and chartered bank loans amounted to \$84,990,000, representing 5,982 units.

17.—Mortgage Loans Approved by Lending Institutions, by Type of Property and of Loan, 1958-67

Year	New Housing		Existing Houses	Other Property	Total
	NHA Loans	Conventional Loans	Conventional Loans	Conventional Loans	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1958.....	519	291	208	174	1,192
1959.....	308	343	216	216	1,083
1960.....	242	307	221	263	1,033
1961.....	453	333	300	298	1,384
1962.....	412	450	358	311	1,531
1963.....	385	652	420	373	1,840
1964.....	353	812	640	507	2,312
1965.....	320	902	749	581	2,552
1966.....	191	574	471	382	1,618
1967.....	356	745	655	369	2,125

Borrower and House Characteristics.—The average income of purchasers of NHA-financed houses in 1967 was \$8,008 or, in terms of family income, \$8,769. These incomes were 10.7 p.c. higher than the corresponding averages for purchasers in 1966 and appeared to be in line with the general increase in incomes in 1967. As in previous years, relatively few purchasers of NHA houses were drawn from the lower third of the range of family incomes. In 1967 only 1.4 p.c. of the borrowers had family incomes of less than \$5,000 compared with 4.8 p.c. in 1966.

The average age of purchasers of NHA houses was about 34 years in 1967, little changed from earlier years. In 1967, just over one half of the purchasers had two or more children and 32.5 p.c. had previously been home owners.

The average price of NHA-financed houses purchased in 1967, including many started in the previous year, was \$19,442. On these houses, purchasers provided down-payments averaging \$4,312 and undertook monthly payments of \$143.16 for mortgage principal, interest and taxes; compared with 1966, these represented increases of 8.6 p.c. in price, 22.0 p.c. in down-payment and 10.3 p.c. in monthly charges. The proportion of monthly charges to income increased from 21.4 p.c. to 21.6 p.c.

As in other years, most of the NHA-financed houses purchased in 1967 were bungalows, which type represented 77.2 p.c. of the total compared with 72.0 p.c. in 1966. The proportion of split-level dwellings decreased from 17.9 p.c. to 17.6 p.c. and that of two-storey dwellings from 9.8 p.c. to 6.6 p.c. Of these dwellings, about 84.6 p.c. had three bedrooms and the remainder had four or more.

Loans to Non-profit Corporations and Limited-Dividend Companies.—In 1967, 81 loans in an aggregate amount of \$30,600,000 were approved to non-profit corporations to assist in the construction of 1,112 self-contained units of low-rental housing and hostel accommodation for 3,776 persons. With the exception of a small number for special groups, all loans were for projects for elderly persons.

Home Improvement Loans.—There was a slight decline in the volume but a slight increase in the value of NHA-guaranteed bank loans for home improvement purposes in 1967. Loan approvals during the year numbered 16,631 for \$35,200,000 as against 18,042 and a value of \$35,900,000 in 1966. At the end of 1967, the outstanding debt on such loans was reported by the banks at \$76,200,000 compared with \$75,300,000 a year earlier. The Home Improvement Loan Insurance Fund increased by \$300,000 during the year to reach \$3,500,000 at Dec. 31, 1967.

Loans for Student Housing Projects.—Loans totalling \$71,160,000 were approved in 1967 for 43 student housing projects providing accommodation for 10,782 students, an increase over 1966 activity when assistance was authorized for developments to house 7,670 students. Loans approved in 1967 were distributed provincially as follows:—

Province	Loans		Students to be Accom- modated
	No.	\$'000	No.
Newfoundland.....	1	1,775	93
Prince Edward Island.....	1	720	153
Nova Scotia.....	4	3,993	716
New Brunswick.....	1	516	152
Quebec.....	3	4,470	757
Ontario.....	14	41,708	5,943
Manitoba.....	3	1,693	299
Saskatchewan.....	5	1,072	270
Alberta.....	3	5,792	1,204
British Columbia.....	8	9,421	1,195

From December 1960, when university housing loans were first authorized, to December 1967, 185 loans totalling \$250,160,000 were approved for the construction of residences for 44,691 students. The statutory limit that may be advanced for such loans is \$350,000,000.

Loans for Municipal Sewage-Treatment Projects.—During 1967, 140 loans amounting to over \$26,594,000 were authorized to assist municipalities to undertake sewage-treatment projects, distributed provincially as follows:—

Province	Loans		Province	Loans	
	No.	\$'000		No.	\$'000
Newfoundland.....	—	—	Ontario.....	54	19,836
Prince Edward Island.....	—	—	Manitoba.....	14	1,449
Nova Scotia.....	4	151	Saskatchewan.....	9	179
New Brunswick.....	2	236	Alberta.....	12	748
Quebec.....	34	4,620	British Columbia.....	11	1,757

From December 1960, when assistance for sewage-treatment projects was authorized, to December 1967, 1,256 loans totalling \$234,609,000 were approved.

Mortgage Marketing.—Sales of NHA-insured mortgages amounted to \$68,000,000 in 1967 compared with \$88,300,000 in 1966. Because of heavy pressure on the market for long-term funds, auctions were not held by the Corporation during 1966 or 1967; total sales by the Corporation to the end of 1965 totalled \$308,600,000. Under Sect. 11 of the National Housing Act, holders of NHA mortgages may obtain loans from the Corporation. Loans outstanding at the end of 1966 totalled \$10,600,000. In January, the Corporation acquired the mortgages securing two loans totalling \$4,900,000. The \$5,600,000 balance of the carryover was repaid during the year, together with ten new loans totalling \$12,600,000.

Urban Renewal.—Activity under the urban renewal provisions of the National Housing Act accelerated in 1967. During the year, the Corporation approved contributions totalling \$663,329 to 38 municipalities to undertake urban renewal studies: three in Nova Scotia, one in New Brunswick, five in Quebec, 11 in Ontario, three in Manitoba, 14 in Saskatchewan and one in British Columbia. In 1966, 43 grants totalling \$697,000 were approved for urban renewal studies.

Federal contributions totalling \$642,000 were approved during 1967 for the preparation of 35 urban renewal schemes: one in Nova Scotia, 11 in Quebec, nine in Ontario, one in Manitoba, two in Saskatchewan, two in Alberta and nine in British Columbia. Also, nine schemes were approved for implementation supported by a federal contribution of \$48,300,000. Together these involved the rehabilitation of 691 acres and the displacement of 4,540 families, and the estimated total cost was \$130,000,000. Locations and acreages were: one in Newfoundland of 186 acres, two in Nova Scotia of 24.1 acres, one in Quebec of 300 acres, three in Ontario of 132 acres, and three in British Columbia of 14.4 acres. By

far the largest approval was the project "La Petite Bourgogne" involving the redevelopment of 300 acres in downtown Montreal and a federal contribution of \$26,000,000, in addition to which light loans amounting to \$9,400,000 were made to municipalities concerned.

Public Housing.—During 1967 approval was given for federal-provincial housing projects located in Corner Brook in Newfoundland; Glace Bay, Halifax and New Waterford in Nova Scotia; Battleford, Prince Albert, Estevan, Fort Qu'Appelle, Humboldt, Kerrobert, Meadow Lake, Moose Jaw, Moosomin, Saskatoon and Weyburn in Saskatchewan; Taber in Alberta; and Vancouver and Saanich in British Columbia. These projects will provide 1,330 dwellings and the federal contribution will be \$15,600,000. To the end of 1967, approval had been given for 14,318 rental units under federal-provincial arrangements. Of these, 11,878 are to be subsidized at rents related to the income of tenants and the remainder will be leased at fixed rents related to dwelling size and at levels sufficient to recover capital costs and to meet operating expenses. The federal 75-p.c. share of the deficit of the subsidized units in 1966, paid in 1967, was \$2,300,000.

Under arrangements with the Provinces of Nova Scotia and Prince Edward Island, assistance may be given under the National Housing Act for co-operative house-building. In 1967, projects were approved for 168 units in Nova Scotia, bringing the total approved since the inception of the program in 1953 to 1,499 units. Since 1960, 119 units have been approved in Prince Edward Island.

In April 1965, agreement was reached between the Federal Government and the Province of Saskatchewan for a joint program to provide housing for metis and enfranchised Indians in sparsely settled regions of northern Saskatchewan. During 1967, 58 units were approved, bringing to 94 the total number approved under this experimental program. The units are located at Air Ronge, Beauval, Buffalo Narrows, Cumberland House, Green Lake, Île à la Crosse, La Loche, and Turnor Lake. The federal contribution for 1967 was \$163,000.

Loan-Assisted Projects.—In 1967, 88 loans amounting to \$104,000,000 were approved for 7,657 units: 160 in Marystown in Newfoundland, 44 in four projects in Nova Scotia, and the remainder in Ontario. The estimated annual 50-p.c. federal contribution toward operating losses for the projects was \$2,800,000. One loan approved during the year to assist in the construction of a public housing project at Ear Falls in Ontario did not involve a federal contribution toward operating losses; federal contributions were approved toward operating losses on two existing projects in Toronto, originally financed under the non-profit section of the Act.

Land Assembly.—Under the federal-provincial arrangements, 24 land assembly projects for 2,323 residential building lots were approved in 1967, located in Burin, Fortune, Grand Bank and Harbour Breton in Newfoundland; Windsor, Kitchener, Sudbury, Hamilton (2) and Timmins in Ontario; Allan, Canora, Colonsay, Humboldt, Indian Head, Lloydminster, Nipawin, Redvers, Rosetown, Shellbrook, Delisle and Melville in Saskatchewan; and Yellowknife in the Northwest Territories (2). During 1966, 2,119 lots were approved for development and approval was also given for the acquisition and ultimate development for housing purposes of 2,866 acres of land. In 1967, eight loans were approved, amounting to \$113,298, to assist in the acquisition of land for future public housing purposes. These were all in Ontario in the municipalities of Barrie, Brockville, Fort Frances, Leamington, Newmarket, Stratford, Timmins and Welland.

Subsection 3.—Housing Statistics of the 1966 Census

Because of the abbreviated nature of the 1966 Census, only two housing questions were included on the questionnaire, one relating to structural type of dwelling and the other to tenure. Tables 18 to 20 provide a comparison of structural type and tenure of occupied dwellings for the provinces and Census Metropolitan Areas. Tables 18 and 19 show the proportionate increase or decrease during the intercensal period, and Table 20 shows the percentage distribution.

18.—Types of Occupied Dwellings, by Province and Census Metropolitan Area, with Percentage Change, Censuses of 1961 and 1966

Province or Territory and Census Metropolitan Area	Type of Dwelling				Apartment or Flat				Total Dwellings ¹			
	Single Detached		Single Attached		Increase or Decrease		1961		1966		1961	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Province												
Newfoundland.....	73,738	5.9	8,886	9.546	7.4	5,170	8,551	65.4	87,940	96,632	9.9	
Prince Edward Island.....	19,427	2.6	2,133	2.465	15.6	2,259	2,697	19.4	23,942	25,360	5.9	
Nova Scotia.....	134,715	2.9	138,596	13.532	-5.8	25,187	31,535	24.4	175,340	185,245	5.6	
New Brunswick.....	95,772	6.7	102,170	9.464	-9.8	25,906	28,816	11.2	132,714	141,761	6.8	
Quebec.....	467,716	17.4	549,282	117.501	-15.1	583,963	719,343	23.2	1,191,368	1,389,115	16.6	
Ontario.....	1,140,653	8.1	1,232,964	185.660	9.0	324,859	453,496	39.6	1,640,750	1,876,545	14.4	
Manitoba.....	190,171	4.4	170,312	10.723	-5.7	37,115	48,578	30.9	239,754	259,280	8.1	
Saskatchewan.....	210,253	4.4	10,485	9.231	-12.0	22,390	34,153	52.5	260,424	260,822	6.3	
Alberta.....	272,069	8.3	18,141	19.669	8.4	54,919	74,536	35.7	349,809	393,707	12.5	
British Columbia.....	367,663	8.5	19,577	22,904	17.0	68,632	114,232	66.4	459,532	543,075	18.2	
Yukon and Northwest Territories.....	6,324	9.0	798	1,059	32.7	678	682	0.6	7,920	8,931	12.8	
Canada	2,978,501	8.6	404,933	401,754	-0.8	1,151,098	1,516,419	31.7	4,551,493	5,180,473	13.7	
Metropolitan Area												
Calgary.....	50,802	18.9	5,173	6,039	16.7	22,132	28,150	27.2	78,396	94,941	21.1	
Edmonton.....	61,800	14.5	5,001	6,362	27.2	21,692	32,667	50.6	89,003	110,224	23.8	
Halifax.....	23,450	3.5	3,563	3,563	-6.0	14,880	19,397	30.4	42,366	47,602	12.6	
Hamilton.....	76,869	8.7	6,312	6,971	10.4	21,966	32,693	48.3	105,240	123,352	17.2	
Kitchener.....	29,688	14.1	2,407	3,231	34.2	10,038	15,892	58.3	42,174	53,037	25.8	
London.....	33,824	11.5	2,411	3,707	53.8	14,088	18,043	28.1	50,404	59,717	18.3	
Montreal.....	106,969	27.6	58,704	59,080	0.6	383,735	472,950	23.3	549,652	698,901	21.7	
Ottawa.....	51,914	16.1	15,345	16,561	7.9	40,196	53,230	32.4	107,570	136,256	21.1	
Quebec.....	23,127	35.8	10,640	16,561	-48.8	45,356	69,280	32.9	79,140	97,321	22.8	
Regina.....	21,544	18.7	1,573	1,723	9.5	6,771	9,823	45.1	30,123	37,314	23.9	
Saskatoon.....	9,537	19.7	1,855	1,644	-11.4	13,345	13,736	2.9	30,123	37,314	23.9	
St. John's.....	19,193	11.0	4,861	4,419	-9.1	5,134	5,655	62.3	25,917	30,727	18.7	
Sudbury.....	15,182	10.5	1,492	1,513	1.6	10,363	10,363	10.8	25,917	30,727	18.7	
Toronto.....	268,984	7.3	2,690	2,745	2.0	9,363	9,471	13.9	26,255	28,224	8.6	
Vancouver.....	171,629	9.9	8,385	95,438	13.1	128,060	195,507	51.7	452,490	586,351	21.6	
Victoria.....	33,747	6.4	8,383	8,800	-0.5	47,680	79,802	67.5	228,586	271,856	19.0	
Windsor.....	40,102	9.1	2,340	2,719	16.0	3,255	3,881	41.9	47,485	53,098	16.0	
Winnipeg.....	90,412	6.2	3,235	2,271	-0.7	9,877	12,381	25.4	53,315	58,250	9.3	
		7.5	6,271	5,901	-5.9	31,066	40,442	27.7	128,530	143,710	11.8	

¹ Includes mobile dwellings.

19.—Tenure of Occupied Dwellings, by Province and Census Metropolitan Area, with Percentage Change, Censuses of 1961 and 1966

Province or Territory and Census Metropolitan Area	Tenure				Total Dwellings			
	Owned		Rented		1961		1966	
	1961 No.	1966 No.	Increase p.c.	1961 No.	1966 No.	Increase p.c.	1961 No.	1966 No.
Province								
Newfoundland.....	76,691	81,276	6.0	11,249	15,366	36.5	87,940	96,632
Prince Edward Island.....	18,958	19,641	3.6	4,984	5,719	14.7	23,942	25,360
Nova Scotia.....	131,405	136,460	3.8	43,385	48,785	11.0	175,340	185,245
New Brunswick.....	94,022	99,840	6.2	38,692	41,921	8.3	132,714	141,761
Quebec.....	583,981	666,007	14.0	607,387	723,108	19.1	1,191,368	1,389,115
Ontario.....	1,157,229	1,259,453	8.8	483,521	577,082	27.6	1,640,750	1,876,545
Manitoba.....	176,156	181,752	3.2	63,598	77,488	21.8	239,754	259,280
Saskatchewan.....	188,226	194,489	3.3	57,198	66,333	16.0	245,424	260,822
Alberta.....	248,537	267,246	7.5	101,272	126,461	24.9	349,809	393,707
British Columbia.....	326,090	359,272	10.2	133,442	183,803	37.7	459,532	543,075
Yukon and Northwest Territories.....	4,292	4,494	4.7	3,628	4,437	22.3	7,920	8,931
Canada.....	3,005,587	3,269,970	8.8	1,548,966	1,910,593	23.3	4,554,493	5,180,473
Metropolitan Area								
Calgary.....	49,623	57,265	15.4	28,773	37,676	30.9	78,396	94,941
Edmonton.....	57,916	67,020	15.7	31,087	43,204	39.0	89,003	110,224
Hamilton.....	23,234	24,742	6.5	19,132	22,950	20.0	42,366	47,692
Winnipeg.....	77,367	84,119	8.7	27,873	30,233	40.8	105,240	123,352
Kitchener.....	30,479	34,838	14.3	11,695	18,199	55.6	42,174	53,037
London.....	33,695	37,011	9.8	16,799	22,706	35.2	50,494	59,717
Montreal.....	179,083	219,779	22.7	370,569	449,122	21.2	549,652	668,901
Ottawa.....	55,569	63,974	15.1	52,001	66,282	27.5	107,570	130,256
Quebec.....	33,458	42,126	25.9	45,682	55,095	20.6	79,140	97,221
Regina.....	20,048	23,512	17.3	10,075	13,802	37.0	30,123	37,314
Saint John.....	10,682	12,494	17.0	13,461	13,701	1.8	24,143	26,195
St. John's.....	12,454	14,038	12.7	5,463	6,699	22.6	17,917	20,737
Saskatoon.....	18,363	20,705	12.8	7,547	12,519	65.9	25,910	33,224
Sudbury.....	14,807	15,601	5.4	11,448	12,909	12.8	26,255	28,510
Toronto.....	325,435	362,145	11.3	157,055	224,436	42.9	482,490	586,581
Vancouver.....	159,414	171,395	7.5	69,182	100,561	45.4	228,596	271,956
Victoria.....	33,893	36,653	8.1	13,592	18,445	35.7	47,485	55,090
Windsor.....	38,620	41,834	8.3	14,695	16,416	11.7	53,315	58,250
Winnipeg.....	85,831	91,007	6.0	42,699	52,703	23.4	128,530	143,710

From Table 18 it may be seen that the number of occupied dwellings in Canada increased from 4,554,493 in 1961 to 5,180,473 in 1966, or by 13.7 p.c. This rate of increase exceeded the 9.7-p.c. increase in population over the same period. The most marked increase for Canada, as a whole, was evidenced in the number of apartments and flats which rose from 1,151,098 to 1,516,419, or 31.7 p.c. Although single detached dwellings still predominated in all provinces with the exception of Quebec, the over-all rate of increase for single homes was much lower at 8.6 p.c.

Although, traditionally, Quebec has had a much higher percentage of apartments or flats than any other province—49.0 p.c. in 1961 and 51.8 p.c. in 1966—this type of dwelling in that province showed a rate of increase of only 23.2 p.c. as compared with one of 66.4 p.c. in British Columbia and 65.4 p.c. in Newfoundland. On the other hand, although the proportion of single dwellings in Quebec to the total remained steady at 39.5 in 1966 compared with 39.3 in 1961, the greatest proportionate increase in single homes for all provinces was in Quebec at 17.4 p.c.

The tendency toward apartment living was reflected in a drop in the proportion of owned dwellings and an increase in that of rented homes in each province.

Tables 18 and 19 giving data for the Census Metropolitan Areas indicate that, for the most part, the provincial patterns were similar in these large urban centres.

Data relating to specific housing characteristics are summarized for 1951 and 1961 in the 1967 Year Book at pp. 723-729 and are detailed in Volume II (Part 2) of the 1961 Census (Catalogue Nos. 93-523 to 93-534). Housing data in similar detail will be available from the 1971 Census.

20.—Percentage Distribution of Occupied Dwellings by Type and Tenure and by Province and Metropolitan Area, Censuses of 1961 and 1966

Province or Territory and Census Metropolitan Area	Type of Dwelling			Tenure		Total Dwellings ¹
	Single Detached	Single Attached	Apartment or Flat	Owned	Rented	
	p.c.	p.c.	p.c.	p.c.	p.c.	No.
Province						
Newfoundland.....1961	83.8	10.1	5.9	87.2	12.8	87,940
.....1966	80.8	9.9	8.8	84.1	15.9	96,632
Prince Edward Island.....1961	81.1	8.9	9.4	79.2	20.8	23,942
.....1966	78.6	9.7	10.6	77.4	22.6	25,360
Nova Scotia.....1961	76.8	8.2	14.4	74.9	25.1	175,340
.....1966	74.8	7.3	16.9	73.7	26.3	185,245
New Brunswick.....1961	72.2	7.9	19.5	70.8	29.2	132,714
.....1966	72.1	6.7	20.3	70.4	29.6	141,761
Quebec.....1961	39.3	11.6	49.0	49.0	51.0	1,191,368
.....1966	39.5	8.5	51.8	47.9	52.1	1,389,115
Ontario.....1961	69.5	10.4	19.8	70.5	29.5	1,640,750
.....1966	65.7	9.9	24.2	67.1	32.9	1,876,545
Manitoba.....1961	79.3	4.7	15.5	73.5	26.5	239,754
.....1966	76.6	4.1	18.7	70.1	29.9	259,280
Saskatchewan.....1961	85.7	4.3	9.1	76.7	23.3	245,424
.....1966	82.2	3.5	13.1	74.6	25.4	260,822
Alberta.....1961	77.8	5.2	15.7	71.0	29.0	349,809
.....1966	74.8	5.0	18.9	67.9	32.1	393,707
British Columbia.....1961	80.0	4.3	14.9	71.0	29.0	459,532
.....1966	73.4	4.2	21.0	66.2	33.8	543,075

¹ Includes mobile dwellings.

20.—Percentage Distribution of Occupied Dwellings by Type and Tenure and by Province and Metropolitan Area, Censuses of 1961 and 1966—concluded

Province or Territory and Census Metropolitan Area		Type of Dwelling			Tenure		Total Dwellings ¹
		Single Detached	Single Attached	Apartment or Flat	Owned	Rented	
Territory		p.c.	p.c.	p.c.	p.c.	p.c.	No.
Yukon and Northwest Territories.	1961	79.8	10.1	8.6	54.2	45.8	7,920
	1966	77.2	11.9	7.6	50.3	49.7	8,931
Canada.....	1961	65.4	8.9	25.3	66.0	34.0	4,554,493
	1966	62.4	7.8	29.3	63.1	36.9	5,180,473
Metropolitan Area							
Calgary.....	1961	64.8	6.6	28.2	63.3	36.7	78,396
	1966	63.6	6.4	29.6	60.3	39.7	94,941
Edmonton.....	1961	69.4	5.6	24.4	65.1	34.9	89,003
	1966	64.2	5.8	29.6	60.8	39.2	110,224
Halifax.....	1961	55.4	8.9	35.1	54.8	45.2	42,366
	1966	50.9	7.5	40.7	51.9	48.1	47,692
Hamilton.....	1961	73.0	6.0	20.9	73.5	26.5	105,240
	1966	67.8	5.7	26.5	68.2	31.8	123,352
Kitchener.....	1961	70.4	5.7	23.8	72.3	27.7	42,174
	1966	63.9	6.1	30.0	65.7	34.3	53,037
London.....	1961	67.0	4.8	27.9	66.7	33.3	50,494
	1966	63.1	6.2	30.2	62.0	38.0	59,717
Montreal.....	1961	19.5	10.7	69.8	32.6	67.4	549,652
	1966	20.4	8.8	70.7	32.9	67.1	668,901
Ottawa.....	1961	48.3	14.3	37.4	51.7	48.3	107,570
	1966	46.3	12.7	40.9	49.1	50.9	130,256
Quebec.....	1961	29.2	13.4	57.3	42.3	57.7	79,140
	1966	32.3	5.6	62.0	43.3	56.7	97,221
Regina.....	1961	71.5	5.2	22.5	66.6	33.4	30,123
	1966	68.6	4.6	26.3	63.0	37.0	37,314
Saint John.....	1961	36.7	7.7	55.3	44.2	55.8	24,143
	1966	40.5	6.3	52.4	47.7	52.3	26,195
St. John's.....	1961	53.2	27.1	19.4	69.5	30.5	17,917
	1966	51.3	21.3	27.3	67.7	32.3	20,737
Saskatoon.....	1961	74.1	5.8	19.8	70.9	29.1	25,910
	1966	63.6	4.6	31.2	62.3	37.7	33,224
Sudbury.....	1961	57.8	10.2	31.9	56.4	43.6	26,255
	1966	57.1	9.6	33.2	54.7	45.3	28,510
Toronto.....	1961	55.7	17.5	26.7	67.4	32.6	482,490
	1966	50.4	16.3	33.3	61.7	38.3	586,581
Vancouver.....	1961	75.1	3.9	20.8	69.7	30.3	228,596
	1966	67.1	3.2	29.3	63.0	37.0	271,956
Victoria.....	1961	75.3	4.9	19.6	71.4	28.6	47,485
	1966	70.8	4.9	23.9	66.5	33.5	55,098
Windsor.....	1961	75.2	6.2	18.5	72.4	27.6	53,315
	1966	73.1	5.6	21.3	71.8	28.2	58,250
Winnipeg.....	1961	70.3	4.9	24.6	66.8	33.2	128,530
	1966	67.6	4.1	28.1	63.3	36.7	143,710

¹ Includes mobile dwellings.

CHAPTER XVIII.—LABOUR*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—The Government in Relation to Labour

Subsection 1.—The Canada Department of Labour and the Federal Department of Manpower and Immigration

The Canada Department of Labour

The Canada Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds. Since that time the Department has been charged with the administration of new legislation and has taken on new functions. Its work fell broadly into two main areas—industrial relations and manpower supply—until Jan. 1, 1966, when all manpower activities were transferred to a new Department of Manpower and Immigration (see p. 752).

The legislation now administered by the Canada Department of Labour in the industrial relations area applies to employers, workers and trade unions under federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, the investigation of complaints of unfair labour practices, refusals to bargain and violations of legislation, the processing of applications for the certification and decertification of trade unions and the conducting of representation votes. It determines wage rates and hours of work in Federal Government contracts for construction or supplies, and promotes joint labour-management consultation. It also administers legislation to prevent discrimination

* Except as otherwise noted, this Chapter has been revised under the direction of the Deputy Minister of the Canada Department of Labour, Ottawa.

in employment based on race, religion, colour or national origin and to provide for equal pay for female employees. In 1965, the Canada Labour (Standards) Code became law. The Code establishes minimum standards of wages, hours of work, vacations with pay and paid general holidays in industries under federal jurisdiction. To ensure safe working conditions for all employees in industries and undertakings coming under federal jurisdiction, the Canada Labour (Safety) Code was passed by Parliament at the end of 1966 and was proclaimed in effect Jan. 1, 1968.

Since 1947, the Canada Department of Labour has encouraged and assisted in the establishment of labour-management committees in industry and services. With considerable expansion in this work in 1966, the service was reorganized and became a separate Branch of the Department, namely, the Labour-Management Consultation Branch. There are now 2,466 (February 1969) active committees whose efforts are directed to such subjects as improving work methods, safety, operating efficiency, plant maintenance, eliminating waste, maintaining good morale, promoting educational and training activities, and joint consultation on operational changes brought about by technological change.

Research, involving regular and special surveys and analyses of economic and social trends affecting the labour force, is an important part of the Department's work carried out by the Economics and Research Branch. It studies wages and working conditions, union organization, collective bargaining, industrial relations, labour standards and safety. Through the Women's Bureau, it investigates the problems of women in the labour force. It operates a plan of workmen's compensation for seamen on Canadian ships and arranges workmen's compensation for Federal Government employees. In addition to the publication of statistical reports and the results of research studies, the Department publishes the monthly *Labour Gazette*, maintains records of labour legislation in the provinces and in other countries and operates a labour lending library. It provides liaison between the International Labour Organization and the federal and provincial governments and is responsible for the administration of Canadian Government annuities (see p. 788).

The Department of Manpower and Immigration*

The fundamental purpose of the Department of Manpower and Immigration is to further the growth of Canada by promoting the effective allocation of manpower resources and by developing the labour force in response to the changing needs of the national economy. These goals are pursued by facilitating the match of people to employment opportunities in ways that improve productivity and help individuals achieve their full capacity. Two main channels are used for the achievement of these goals: (1) the counseling, placement and, when necessary, the training and/or relocation of members of the labour force; and (2) the introduction of new persons through immigration.

Operations Canada.—The operations of the Department within Canada are described by the term "Operations Canada" which distinguishes these field activities from the activities of Head Office and Overseas Offices. Operations Canada embraces five Regional Headquarters and the Canada Manpower Centres (CMCs) and Canada Immigration Centres (CICs) under their administration. The Director General of Operations reports to the Deputy Minister of the Department; Regional Directors, responsible for both manpower and immigration activities, report to the Director General of Operations.

The objectives of Operations Canada are:

1. *To provide, through strategically located Canada Manpower Centres, the facilities by which employers may find workers, and workers find jobs, efficiently and satisfactorily.* Inherent in this statement is the concept that each CMC must strive to provide to its community a high quality of professional service in manpower matters.
2. *To help workers develop their maximum potential in their individual contribution to the economy, and to obtain jobs that match their skills, capabilities and needs.* Workers are advised where and how they may obtain suitable employment or how they may improve their chances of getting and holding better jobs. The latter consists of assisting the worker to identify a realistic occupational goal and to develop a plan for achieving it through training or other preparation.

* Prepared by the Information Service, Department of Manpower and Immigration, Ottawa.

3. *To help employers meet their labour needs and to advise them on the supply and most effective utilization of manpower.* This activity consists of assisting employers in the recruitment of workers with the skills and abilities needed for current job vacancies, providing employers with up-to-date occupational labour-market information for use in their planning, and advising them on employment matters generally.
4. *To help in preparing the on-coming Canadian manpower supply for effective entry to and participation in the labour market.* This involves developing and maintaining close working relationships with organizations responsible for the education and training of youth, and co-operating with them in their efforts to equip students for productive employment.
5. *To help those already in the labour force to adapt to economic and technological change and become established or re-established in employment.* The aim is to help workers and employers utilize the opportunities arising from change and to minimize adverse effects on the individual worker. This involves encouraging and assisting in co-operative pre-planning by employers and workers, the use of training and retraining and, where necessary, the vigorous use of mobility and placement programs.
6. *To help reduce seasonal and cyclical fluctuations in employment.* To serve this objective, a variety of programs are carried out by many different government departments. The Department of Manpower and Immigration has a general responsibility for promoting and co-ordinating the application of stabilization measures.
7. *To provide services for the reception at destination, settlement and placement of immigrants.* Newly arrived immigrants are received by Canada Manpower Centre personnel and those participating in the labour force receive immediate counselling toward effective placement.

In addition to the above, Operations Canada includes activities having to do with the processing of the international travelling public (admissions) and the enforcement of the Immigration Act and Regulations within Canada.

Manpower Division.—Under the Assistant Deputy Minister—Manpower, the Manpower Division provides functional support for the manpower areas of Operations Canada and consists of three units: the Activities Development Branch, the Manpower Utilization Branch, and the Programs Branch.

The *Activities Development Branch* deals with the demand side of the labour market, providing guidelines in the following main areas: regulations with employers to develop the utilization of Departmental services, particularly employment services; specialized information on industrial needs; and organization of Canada Manpower Centres to give effective service to employers. The Branch also directs the operations of the Manpower Consultative Service which administers Federal Government assistance to industry in matters relating to manpower dislocations resulting from technological and other changes.

The *Manpower Utilization Branch* is concerned with the supply side of the labour market. It formulates policies and guidelines for the provision of employment services to workers through Canada Manpower Centres, and promotes the use of these Centres; develops aptitude and achievement tests for use in counselling and selection of persons for jobs; advises on the use of methods for matching jobs and workers; and advises on the manpower utilization of special groups such as youth, handicapped, women, immigrants and migrants, and indigenous peoples. The Branch administers the Vocational Rehabilitation of Disabled Persons Act under which the Federal Government shares equally with participating provinces in the costs of vocational rehabilitation services to disabled persons, and also the Operation Retrieval program designed to bring Canadian employment opportunities to the attention of Canadians studying abroad and to bring to the attention of employers in Canada the qualifications of these students. Through its section on older workers, the Branch studies developments in the field of aging which relate to employment and carries on a continuing educational program designed to create a more favourable employment climate for middle-aged and older workers.

The *Programs Branch* deals with the major programs that facilitate the matching of labour-market supply and demand. It administers the occupational training for adults program which provides for the training or retraining of adults in schools and in industry to meet the requirements of the labour market, and also the manpower mobility program which facilitates the movement of workers to jobs.

Subsection 2.—Federal Labour Legislation and Provincial Labour Legislation

Federal Labour Legislation*

Fair Wages Policy.—The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act (RSC 1952, c. 108), as amended by an Act to amend the Fair Wages and Hours of Labour Act, effective Apr. 1, 1967 (RSC 1967, c. 24), and by the Fair Wages and Hours of Labour Regulations. Hours of work on construction contracts are limited to eight a day and 48 a week, except in exceptional circumstances approved by the Minister or in such cases as the Governor in Council may prescribe; hours worked in excess of eight in a day or 40 in a week must be paid for at an overtime rate at least equal to one and one half times the rates required under the contract; wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour; in no case shall the rates be less than the minimum hourly rate prescribed by or pursuant to the Canada Labour (Standards) Code.

Wages and hours of work on contracts for equipment and supplies are regulated by Order in Council PC 1954-2029. The hours of such work must be those fixed by the custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed.

The Fair Wages and Hours of Labour Regulations and Order in Council PC 1954-2029 both contain a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

The Industrial Relations and Disputes Investigation Act.—This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made

* The Act establishing the Canada Labour (Safety) Code (SC 1966-67, c. 62), proclaimed in effect Jan. 1, 1968, provides for the consolidation, under the title "Canada Labour Code", of the Acts described under this heading, with the exception of the Fair Wages and Hours of Labour Act and the Fair Wages Policy Order.

for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are set down in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes. The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions affecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith. The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents and the writing of a procedure into a collective agreement for the final settlement of disputes concerning the meaning or violation of such agreement.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Canada Department of Labour.

Canada Fair Employment Practices Act.—This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction—those covered by the Industrial Relations and Disputes Investigation Act (see above). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies that practise discrimination; and the use of advertisements or inquiries in connection with employment that express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

Female Employees Equal Pay Act.—This Act came into effect on Oct. 1, 1956 and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

Canada Labour (Standards) Code.—This Act received Royal Assent on Mar. 18, 1965 when the administration and general provisions of Part V came into effect. The Act provides, in Parts I to IV which came into force on July 1, 1965, minimum standards with respect to hours of work, minimum wages, annual vacations and general holidays in industries under federal jurisdiction; the Annual Vacations Act 1958 was repealed.

The standard hours of work are eight a day and 40 a week, with maximum hours of 48 a week. Overtime pay at not less than time-and-one-half is required for all hours worked in excess of the standard hours. Permits are required in order to work more than 48 hours a week. Where the nature of the work necessitates irregular distribution of hours of work, the hours may be averaged over a period of two weeks or more.

The minimum wage is \$1.25 an hour for all persons 17 years of age or over and the minimum wage for persons under 17 years of age is \$1.00 an hour. Special rates may be set for persons receiving on-the-job training and for disabled or handicapped persons.

Employees are entitled to a two-week vacation with pay after one year of employment, with vacation pay calculated at 4 p.c. of wages. The general holidays are eight in number and every employee is entitled to a holiday with pay on each of them, or substitutes for them. Pursuant to an amendment to Part IV of the Code, the Multi-employer Employment (Longshoring) Regulations have been passed to provide for the granting of pay in lieu of general holidays to longshoremen in multi-employer employment who previously could not qualify for general holiday benefits because they did not have sufficient employment with one employer.

The Code has special and transitional provisions. Any person may make a submission (under Sect. 51) for deferment or suspension of Part I (Hours of Work). The Minister may grant deferment or suspension where it can be shown that the application of Part I is or

would be prejudicial to the interests of the employees or detrimental to the operation of the business. The Minister's order to defer or suspend may be for a period up to but not exceeding 18 months from the date of the order, and the order may or may not contain conditions on hours. A further deferment or suspension may be made by the Governor in Council but only after there has been an inquiry, and the order of the Governor in Council must contain conditions on hours of work. Regulations have been enacted to carry out the purposes of the Code.

Canada Labour (Safety) Code.—This Code, which received Royal Assent in late 1966 and was proclaimed in effect as of Jan. 1, 1968, is the first general safety legislation to be passed by the Parliament of Canada. Its primary purpose is to ensure safe working conditions for all employees in industries and undertakings under federal jurisdiction. The main features of the Code are that: (1) it provides for all the elements of a complete industrial safety program; (2) it sets out the general obligation of employers and employees to carry out their duties in a safe manner and authorizes the making of regulations for dealing with the problems of occupational safety; (3) it does not override but complements other federal laws and provincial legislation, thus strengthening the safety movement; (4) it authorizes the use of advisory committees and special task forces to assist in developing the program, all to be done under continuous consultation among federal and provincial government departments, industry and organized labour; and (5) it provides for research into causes and prevention of accidents and for an extended program of safety education.

Provincial Labour Legislation

Because of the authority given by the British North America Act to the provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights in the province, power to enact labour legislation is largely the prerogative of the provinces. Since it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights. Under this authority, the provincial legislatures have enacted a large body of legislation affecting the employment relationship in such fields as working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations, workmen's compensation and other matters. In each province a department of labour or department of labour and manpower (the designations vary) is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a workmen's compensation board appointed by the Lieutenant-Governor in Council.

Minimum Wages.—As a means of ensuring adequate living standards for workers, all provinces have enacted minimum wage legislation. These laws vest in a minimum-wage-fixing board or the Lieutenant-Governor in Council authority to establish minimum wages for employees. In most provinces minimum wage orders now cover almost all employment except farm labour and domestic service. Minimum rates set by the orders apply throughout the province except in Nova Scotia, Quebec and Saskatchewan. Both Nova Scotia and Quebec are divided into two zones for minimum wage-setting purposes. In Saskatchewan, minimum rates vary between urban and rural areas. Except in Newfoundland, Nova Scotia and Prince Edward Island, the same rates are set for both sexes. The British Columbia Board issues a separate order for each industry or occupation and a general order for employees not so covered. In the other provinces, general orders are issued, supplemented by special orders in some cases.

Hours of Work.—Five provinces have general hours-of-work laws. Those of Ontario, Alberta and British Columbia set limits on hours of work. Hours are limited in Alberta and British Columbia to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. The Manitoba and Saskatchewan Acts regulate hours through the requirement that one and one half times the regular rate must be paid if work is continued after specified

limits. The Manitoba law requires payment of the overtime rate after eight and 48 hours for men and eight and 44 hours for women. The Saskatchewan Act requires payment of the overtime rate after eight and 44 hours. Some exceptions are provided for in all five Acts. Apart from general hours-of-work laws, other statutes regulate working hours in some industries.

Regulation of Wages and Hours in Certain Industries.—Industrial standards legislation is in effect in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedule of wage rates and hours of work agreed upon by a representative group of employees and employers in an industry or trade may, upon approval by the government, be given statutory effect by Order in Council, with the result that such wage rates and hours become the minimum terms of employment for the entire industry or trade in the area. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule. This legislation is used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. In Newfoundland, Nova Scotia and New Brunswick, schedules have been issued only for certain construction trades in some areas. In Ontario, schedules for the garment trades, the fur industry and the hard furniture industry apply throughout the province and a substantial number of schedules apply to various construction trades and to barbering in specified areas.

Under the Quebec Collective Agreement Decrees Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree, which has the force of law. Approximately 100 decrees applying to construction, the garment trades, barbering and hairdressing, commercial establishments, garages and service stations, and other industries and services are in effect, covering close to 250,000 employees. Of these decrees, 15 apply throughout the province.

The Construction Industry Wages Act in Manitoba provides for the setting of minimum rates of wages and maximum hours of work at regular rates for employees in the construction industry, on the recommendations of a board equally representative of employers and employees, with a public member as chairman. Under this Act, annual schedules set the regular work week and hourly rates of wages for various classifications of workers in the heavy construction industry, in the Greater Winnipeg building construction industry, and in rural building construction.

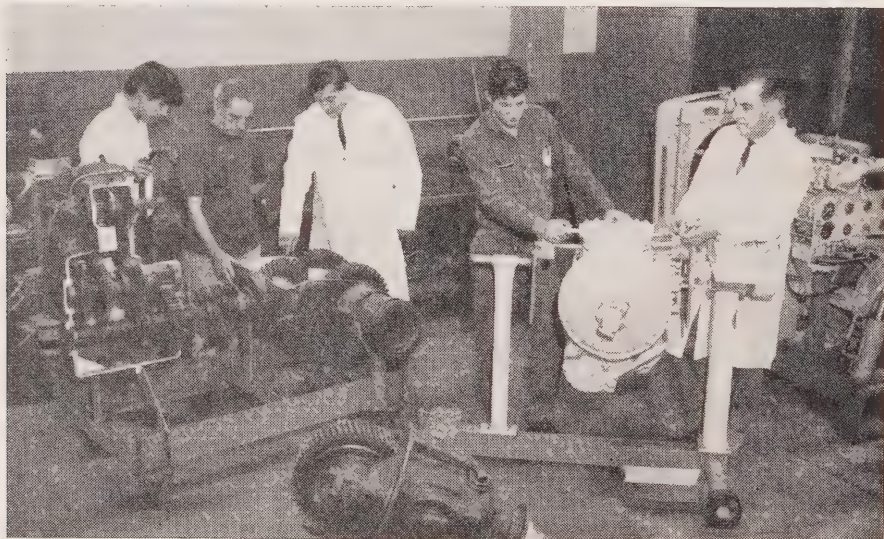
Annual Vacations and Public Holidays.—All provinces except Newfoundland have annual vacations legislation applicable to most industries. In Prince Edward Island and New Brunswick, workers are entitled to a vacation of one week after a year of service; in Ontario, workers are entitled to a vacation of one week after each of the first three years of employment, and of two weeks after the fourth and each subsequent year. In Nova Scotia, Quebec and the four western provinces, the annual paid vacation required by law is two weeks after a year of service and, in Saskatchewan, three weeks after five years of service.

The Provinces of Alberta, British Columbia, Manitoba, Nova Scotia, Ontario and Saskatchewan have enacted legislation of general application dealing with public holidays. The number of holidays named varies from five to eight, and the provisions for payment also vary.

Anti-discrimination Laws.—Nine provinces have adopted fair employment practices laws forbidding discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. In addition, in British Columbia and Ontario, discrimination in employment and trade union membership on grounds of age is prohibited. Eight provinces have equal pay laws that forbid discrimination in rates of pay solely on the basis of sex, and the Quebec statute respecting discrimination in employment forbids discrimination in employment on the basis of sex.

Accident Prevention.—Factory or industrial safety Acts in most provinces establish safeguards for the protection of the health and safety of workers in factories and other workplaces with respect to such matters as sanitation, heating, lighting, ventilation and the guarding of dangerous machinery. Long-established laws regulating the design, construction, installation and operation of mechanical equipment, such as boilers and pressure vessels, elevators and lifts and electrical installations, have been revised in recent years in line with technological changes, and legal standards have been set in new fields involving hazards to workers and the public, such as the use of gas- and oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring safety standards to be observed in construction and excavation work are in force in most provinces.

Labour Relations.—In all provinces, there is legislation similar in principle to the federal Industrial Relations and Disputes Investigation Act, designed to establish equitable relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees. Except in Saskatchewan, they require the parties to comply with the conciliation procedures laid down in the Act before a strike or lockout may legally take place, and they provide also that every collective agreement must contain provisions for the settlement of disputes arising out of the agreement, and prohibit strikes and lockouts while an agreement is in effect. All prohibit defined unfair labour practices and prescribe penalties. In most provinces, certain classes of employees who are engaged in essential services, such as policemen and firemen, are forbidden to strike and, in lieu of the right to strike, have recourse to final and binding arbitration. There are provisions relating to hospital disputes in six provinces.



Young men now entering the construction equipment maintenance and diesel service field in Ontario are required to undergo five years of apprenticeship training before gaining professional mechanic status, including 32 weeks of in-school instruction and the remainder on-the-job training. The provincial government pays the salaries of instructors and has a subsidy payment schedule for workers taking the course, in which it has federal assistance.

Certification of Qualified Tradesmen.—All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for the issuing of certificates of qualification, on application, to qualified tradesmen in certain trades. In some provinces, legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Changes in 1968.—One of the significant developments in provincial labour legislation in 1968 was the enactment in Ontario of a new labour code, the Employment Standards Act. It provides minimum standards of hours of work, overtime pay, minimum wages, holiday pay and annual vacations with pay and ensures equal pay for equal work for male and female workers employed in the same establishment. The main changes were the introduction of premium pay at the rate of time and one half the regular rate for overtime beyond 48 hours in a week and for work performed on seven specified holidays, the enforcement of the equal pay provisions through regular inspection, and a new wage collection procedure empowering the collection of unpaid wages up to a maximum of \$1,000 per claim.

There were a number of changes in minimum wages. Prince Edward Island, which had a province-wide rate applicable to men only, introduced a general minimum wage order for women, setting a minimum rate which takes effect in three steps over a period of one year. Nova Scotia dropped its provision for inexperienced workers' rates and made a change in its zoning system, setting minimum rates for two geographic zones instead of three. In Saskatchewan, hourly rather than weekly rates were set, as in other provinces. General minimum wage rates were increased in five provinces. In Ontario, the minimum rate was increased to \$1.30 an hour, the highest general minimum in Canada.

The minimum rates in effect at the beginning of 1969 for experienced workers in certain cities are shown in Table 1.

**1.—Minimum Wage Rates for Experienced Workers in Certain Cities,
by Sex, Jan. 1, 1969**

Item, Type of Establishment and Sex	St. John's, Nfld.	Char- lotte- town, P.E.I.	Halifax, N.S.	Saint John, N.B.	Mont- real, Que.	To- ronto, Ont.	Winni- peg, Man.	Regina, Sask.	Ed- monton, Alta.	Van- couver, B.C.
Maximum hours per week to which the rates apply.	M. 48 ¹ F. 48 ¹	— 48 ²	48 48	48 48	48 ³ 48 ³	48 ⁴ 48 ⁴	48 44	44 44	44 44	40 40
	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour	\$ an hour
Factories.....	M. F.	1.10 0.85	1.10 ⁵ 0.85	1.15 0.90	1.00 1.00	1.25 1.25	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.25
Laundries.....	M. F.	1.10 0.85	1.10 0.85	1.15 0.90	1.00 1.00	1.10 1.10	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.25
Shops.....	M. F.	1.10 0.85	1.10 0.85	1.15 0.90	1.00 1.00	1.25 1.25	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.25
Hotels and restaurants	M. F.	1.10 0.85	1.10 0.85	1.15 0.90	1.00 1.00	1.05 1.05	1.15 1.15	1.25 1.25	1.05 1.05	1.25 1.25
Beauty parlours.....	M. F.	1.10 0.85	1.10 0.85	0.95 0.95	1.00 1.00	1.25 1.25	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.60
Theatres and amuse- ment places.....	M. F.	1.10 0.85	1.10 0.85	1.15 0.90	1.00 1.00	1.10 1.10	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.25
Offices.....	M. F.	1.10 0.85	1.10 0.85	1.15 0.90	1.00 1.00	1.25 1.25	1.30 1.30	1.25 1.25	1.05 1.05	1.25 1.25

¹ 40 hours in shops. ² 54 hours in food processing industry. ³ 54 hours in hotels and restaurants,
laundries, theatres and amusement places. ⁴ 55 hours for seasonal workers in the hotel, motel, tourist resort,
restaurant and tavern industry; 60 hours for seasonal workers in fruit and vegetable processing. ⁵ 90 cents an
hour for male workers in food processing plants.

Annual Vacations and Public Holidays.—In Quebec, the annual vacation to which workers are entitled after a year of employment was extended from one week to two weeks, effective Jan. 1, 1969. In line with this change, vacation pay was increased from 2 p.c. to 4 p.c. of earnings. In Ontario, provision was made in the Employment Standards Act for premium pay for work done on seven public holidays. The holidays are Christmas Day, New Year's Day, Good Friday, Victoria Day, Dominion Day, Labour Day and Thanksgiving Day. An employee who works on any of these holidays must be paid a minimum of one and one half times his regular wage rate. If New Year's Day, Dominion Day or Christmas Day falls on a Sunday, the following day is to be considered a holiday for purposes of overtime pay.

Anti-discrimination Measures.—Prince Edward Island adopted a Human Rights Code prohibiting discrimination on grounds of race, religion, religious creed, colour, or ethnic or national origin in regard to public accommodation, rental practices, employment and membership in trade unions. The equal pay provisions of the Equal Pay Act, now repealed, were also included in the Human Rights Code, requiring employers to pay female employees the same rate of wages as male employees when they are required to do substantially the same work in the same establishment.

The equal pay provisions of the Ontario Human Rights Code were transferred to the Employment Standards Act and expanded to prohibit discrimination against either sex in the payment of wage rates. Under the amended provisions, the employer is required to pay equal wages to men and women for the same work performed in the same establishment, the performance of which requires equal skill, effort and responsibility and which is performed under similar working conditions. Differences in rates of pay based on a seniority system, a merit system, or a system that measures earnings by quantity or quality of production do not constitute discrimination within the terms of the Act.

Ontario amended the Age Discrimination Act, which forbids discrimination by employers and trade unions against persons between the ages of 40 and 65 because of their age. The amendment prohibits job advertising that expresses a limitation or specification based on age.

Industrial Safety.—The Prince Edward Island Workmen's Compensation Board issued comprehensive industrial safety regulations, applicable to all industries within the scope of the Workmen's Compensation Act. Preparatory to the initiation of a system of boiler inspection by the Prince Edward Island Department of Labour, amendments were made to the Steam Boiler Act and up-to-date boiler and pressure vessel regulations were put into effect.

Amendments were made to the New Brunswick Industrial Safety Code. These included a provision stating that, where possible, noise levels in places of employment must be kept below 90 decibels.

As a result of amendments to the Ontario Industrial Safety Act, the approval of plans and specifications of factories and other buildings by an engineer of the Department of Labour is now required before construction or alterations may be begun and a copy of the approved plans must be kept on the construction site. For the more effective enforcement of the Act, the maximum fine that may be imposed for a contravention of the Act was increased from \$1,000 to \$5,000. In Quebec, regulations respecting the handling and use of explosives on construction sites were updated, and new regulations were issued aimed at the protection of workers using plaster spray machines.

Workmen's Compensation.—Amendments to the Workmen's Compensation Acts in six provinces brought about a number of important changes, including extensions of coverage, increased ceilings on annual earnings, a reduction in the waiting period in two provinces, and increases in dependants' pensions and allowances.

In Nova Scotia, the fishing, dredging and sealing industries were brought within the general provisions of the Act, effective from Jan. 1, 1970.

The maximum annual earnings on which compensation may be paid were raised from \$5,000 to \$6,000 in Nova Scotia, from \$6,000 to \$6,600 in Saskatchewan, and from \$6,000 to \$7,000 in Ontario. In New Brunswick, the ceiling was raised from \$5,000 to \$5,500 for the year 1969 and to \$6,000 thereafter. The waiting period was reduced from four days to three in Nova Scotia and from three days to one in Ontario.

The maximum allowance for funeral expenses was raised from \$300 to \$400 in Nova Scotia and Ontario and from \$300 to \$500 in New Brunswick. A widow's pension was increased from \$75 to \$125 a month in Ontario, and from \$110 to \$115 a month in Saskatchewan. In Saskatchewan, the provision under which the pension reverted to \$75 a month after the age of 70 was deleted. In Ontario, the lump sum payment to a widow was increased from \$300 to \$500.

Monthly allowances to dependent children were raised in Ontario, Prince Edward Island and Saskatchewan. In Nova Scotia, compensation is now to be paid to the end of the school year in which a child attains the age of 18, rather than to the child's 18th birthday, as formerly. In Saskatchewan, at the discretion of the Workmen's Compensation Board, payment of compensation to children continuing their education may be extended to age 21 instead of 19, as before.

In British Columbia, a further 2-p.c. increase in widows' and children's benefits went into effect on Jan. 1, 1968, in accordance with the formula under which these payments are tied to the Consumer Price Index.

Labour Relations.—In British Columbia, the Mediation Commission Act was enacted, establishing a new system of mediating industrial disputes. In place of the former system of conciliation officers and *ad hoc* conciliation boards, the Act established a Mediation Commission, an independent agency separate and apart from the Department of Labour, to investigate and assist in resolving labour-management disputes and to recommend fair and reasonable terms of settlement. In cases where the Cabinet considers that a dispute adversely affects the public interest and welfare, the Commission's recommendations may be made binding. Where an order is made referring a dispute to the Mediation Commission for a binding decision, no strike or lockout may occur or, if one is in progress, it must be terminated within 24 hours. The Mediation Commission is empowered to establish research facilities to provide economic and statistical data which, it is hoped, will be accepted by both parties in a labour dispute.

Amendments to the Nova Scotia Trade Union Act gave the Labour Relations Board power to terminate a strike or lockout which is illegal under the Act or a collective agreement or one caused by a jurisdictional dispute. The Board is authorized to try to settle such disputes but in any case may issue a cease and desist order which must be complied with. Other amendments were designed to expedite the certification process in the construction industry.

A number of amendments were made to the Alberta Labour Act, one of which gave the Minister of Labour authority to dispense with second-stage conciliation. Where he does so, the conciliation commissioner's recommendations take the place of the award of a conciliation board. The Prince Edward Island Labour Relations Board was empowered to deal with complaints of unfair labour practices. Amendments to the Saskatchewan Trade Union Act dealt with the rights of successor unions and made provision for the continuance in force of a collective agreement until a new agreement is signed or the employees are on a legal strike.

The Newfoundland Labour Relations Act was amended to validate a collective agreement covering workers on the Churchill Falls project in Labrador and to make provision for future contracts of the same type.

With a view to making available an increased number of competent arbitrators for the arbitration of grievance disputes, the Ontario Legislature established the Ontario Labour-Management Arbitration Commission, a seven-member body equally representative of employers and employees. Quebec enacted a law providing for collective bargaining for its provincial police. Legislation in Saskatchewan governing teachers' salary negotiations was revised to provide for area bargaining, instead of bargaining by individual school boards.

Section 2.—The Labour Force*

Since 1946, reliable information for analysis of employment in Canada, at the national level and for the five major regions, has been provided through a labour force survey. Between November 1945 and November 1952, quarterly surveys were undertaken and since then the survey has been carried out on a monthly basis. The sample used in the survey has been designed to represent all persons in the population, 14 years of age or over, residing in Canada, with the exception of residents of the Yukon and Northwest Territories, Indians living on reserves, inmates of institutions and members of the Armed Forces. Interviews are carried out in approximately 30,000 households chosen by area sampling methods across the country.†

In the labour force survey, persons are classified on the basis of their activity during the week prior to the survey interview week. This week is called the reference week. The main divisions in the classification are:—

Labour Force.—The civilian labour force is composed of that portion of the civilian non-institutional population, 14 years of age or over who, during the reference week, were employed or unemployed.

Employed.—The employed include all persons who, during the reference week: (a) did any work for pay or profit; (b) did any work which contributed to the running of a farm or business operated by a related member of the household; (c) had a job, but were not at work, because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as persons without work and seeking work.

Unemployed.—The unemployed include all persons who, through the reference week: (a) were without work and seeking work, i.e., did not work during the reference week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

Not in the Labour Force.—Those not in the labour force include all civilians 14 years of age or over (exclusive of institutional population) who are not classified as employed or unemployed. This category includes those: going to school; keeping house; too old or otherwise unable to work; and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed or, if they looked for work, as unemployed.

The estimates derived from the labour force survey, which are based on a sample of households, are subject to sampling error. Somewhat different figures might be obtained if a complete census were taken and this difference is called the sampling error of the estimates. In the design and processing of the labour force survey, extensive efforts are made to minimize the sampling error; in general, the percentage of error tends to decrease as the size of the estimate increases. A statistical measure of the sampling error is given in DBS monthly publication *The Labour Force* (Catalogue No. 71-001).

* Prepared in the Special Surveys Division, Dominion Bureau of Statistics.

† A comprehensive description of the survey is given in DBS publication *Canadian Labour Force Survey—Methodology* (Catalogue No. 71-504).

**2.—Estimates of the Civilian Labour Force and its Main Components,
Annual Averages, 1959-68**

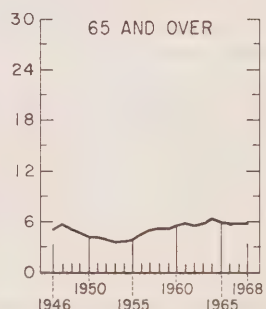
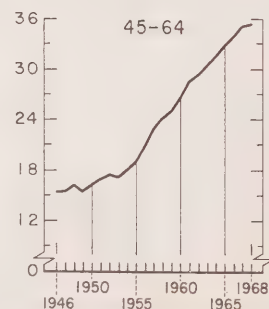
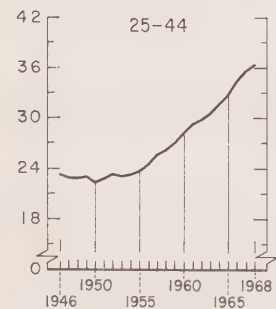
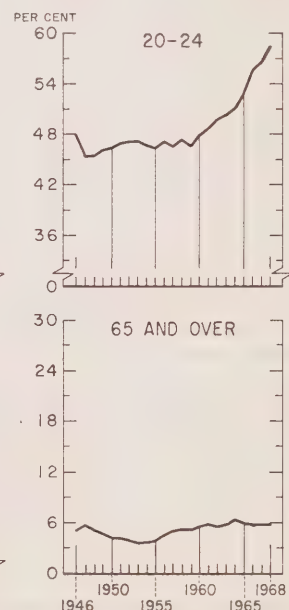
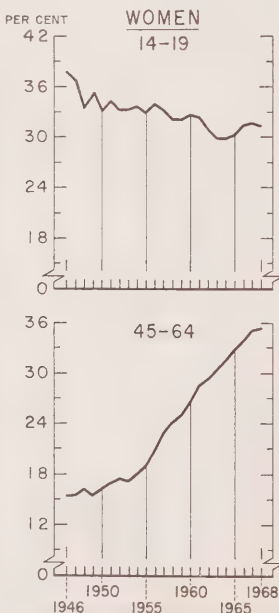
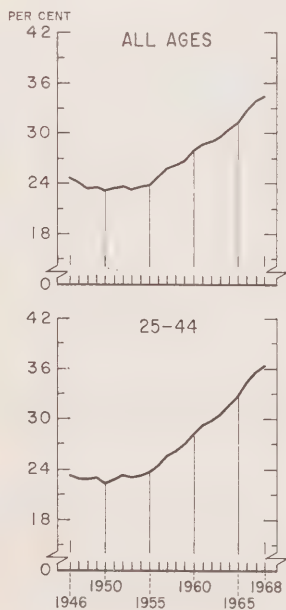
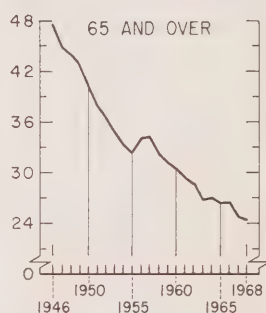
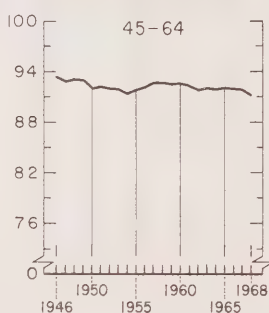
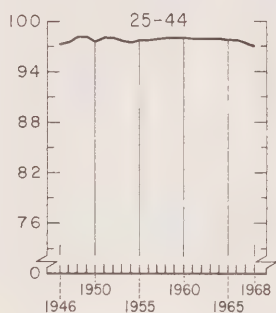
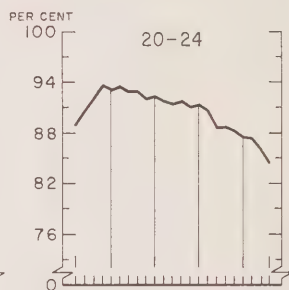
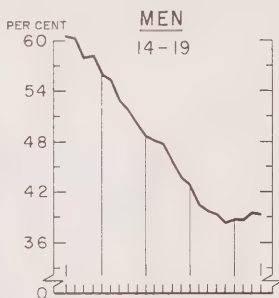
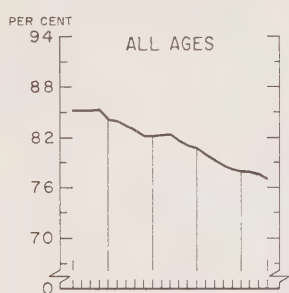
Year	Civilian Popu- lation (14 years of age or over)	Civilian Labour Force (14 years of age or over)							Persons not in the Labour Force (14 years of age or over)
		Employed					Unem- ployed	Total Labour Force	
		Non-agriculture			Agri- culture	Total (em- ployed)			
		Paid Workers	Other	Total (non-agri- culture)					
	'000	'000	'000	'000	'000	'000	'000	'000	'000
1959	11,605	4,624	546	5,170	700	5,870	372	6,242	5,363
1960	11,831	4,732	551	5,282	683	5,965	446	6,411	5,420
1961	12,053	4,799	575	5,374	681	6,055	466	6,521	5,531
1962	12,280	4,980	585	5,565	660	6,225	390	6,615	5,665
1963	12,536	5,138	588	5,726	649	6,375	374	6,748	5,787
1964	12,817	5,368	611	5,979	630	6,609	324	6,933	5,884
1965	13,128	5,655	613	6,268	594	6,862	280	7,141	5,986
1966	13,475	5,999	610	6,609	544	7,152	267	7,420	6,055
1967	13,874	6,206	614	6,820	559	7,379	315	7,694	6,179
1968	14,264	6,391	601	6,992	546	7,537	382	7,919	6,344

Characteristics of the Civilian Labour Force, 1959-68.—The period 1959-68 was one of rapid expansion in the Canadian labour force, particularly the last five years. Whereas the total population rose by 22.9 p.c. between 1959 and 1968, the total labour force increased by 26.9 p.c. Consequently the participation rate, that is the labour force as a percentage of the population of working age, rose from 53.8 to 55.5. This rate, equalled in 1967, was the highest on record.

In the decade under review, as in the entire postwar period, the male participation rate has been declining; in 1968 the rate was 77.0 p.c. compared with 81.0 p.c. in 1959. This drop in the male participation rate can be attributed to a large degree to reduced participation among younger and older men. The participation rate for those 14-19 years of age dropped from 43.6 p.c. to 39.1 p.c.; for those in the 20-24 age group the reduction was from 91.0 p.c. to 84.4 p.c.; and for those 65 years of age or over the rate was reduced from 31.0 p.c. to 24.4 p.c. A factor contributing to the reduction in labour force participation of younger men has been the increase in the number of those who have deferred their entry into the labour market by remaining at school longer. In 1967-68, there were about twice as many boys enrolled in secondary schools and almost two and one half times as many young men registered at Canadian universities as in 1958-59. A factor that has contributed to the reduced labour force participation of older men has been the increase in private industrial pension plans, making earlier retirement possible. For example, the survey of working conditions, conducted by the Department of Labour, shows that in manufacturing in 1959 there were approximately 737,000 persons employed in reporting establishments having a private pension plan. In 1967, the latest year for which figures are available, the number was about 988,000.

More than compensating for the decline in male labour force participation has been the accelerated entry of women into the labour force. Between 1959 and 1968 the absolute increase in the labour force was actually much greater for women than for men. Of the total increase of 1,677,000, women accounted for 922,000. Women 20-64 years of age experienced a substantial increase in their participation rates. Between 1959 and 1968,

PARTICIPATION RATES BY AGE GROUP AND SEX, ANNUAL AVERAGE, 1946-68



the rate for those 20-24 years of age rose from 46.5 p.c. to 58.4 p.c.; for the age groups 25-44 and 45-64 the increases were from 27.0 p.c. to 36.4 p.c. and from 25.1 p.c. to 35.4 p.c., respectively. There was little change in the participation rates for younger and older women.

An important contributing factor to the rapid expansion of the female labour force has been the tendency for married women to remain in or re-enter the labour force after marriage. In 1968, married women comprised 54.7 p.c. of the female labour force compared with 44.3 p.c. in 1959. During the 1959-68 period their participation rate rose from 18.0 p.c. to 29.6 p.c.

Total employment was higher in 1968 than in 1959 by 1,667,000, or 28.4 p.c.; male employment was higher by 783,000, or 17.9 p.c., and female employment by 884,000, or 58.7 p.c. Agricultural employment was 154,000 lower at the end than at the beginning of the period. This is a continuation of a long-term trend in evidence throughout the postwar period. Non-agricultural employment, however, increased by 1,822,000, or 35.2 p.c.

In 1968, total employment was higher than in 1959 in all regions; the Atlantic region increased by 23.7 p.c., Quebec 28.5 p.c., Ontario 28.8 p.c., the Prairie region 22.0 p.c., and British Columbia 44.0 p.c.

In 1961, two new systems of coding industry and occupation data were introduced, the 1960 Standard Industrial Classification and the 1961 Census Occupational Classification. Data prior to 1960 were coded according to the old classifications and are therefore not comparable; for this reason, Tables 4 and 5 showing the distribution of the employed by industry and by occupation cover the period 1961-68 only. An important development of that period has been the continuing increase in the proportion of persons employed in the service-producing industries and the corresponding decline in the goods-producing industries. Transportation, trade, finance and service together accounted for 60.3 p.c. of total employment in 1968 compared with 55.4 p.c. in 1961. Conversely, the goods-producing sector, which includes agriculture, primary industries, manufacturing and construction, accounted for 39.6 p.c. of total employment in 1968 compared with 44.4 p.c. in 1961.

The most significant changes occurred in service whose share of total employment rose from 25.3 p.c. to 30.4 p.c. and in agriculture whose share dropped from 11.2 p.c. to 7.2 p.c. during the period. There were also changes between 1961 and 1968 in the proportions of persons employed among the different occupational groups, most of which were minor. Two notable exceptions were the increase in the proportion of persons employed in professional and technical occupations from 9.9 p.c. to 13.0 p.c. and the relative decline in employment among farmers and farm workers from 11.3 p.c. to 7.3 p.c.

There was an uneven regional distribution of unemployed persons in 1968. The Atlantic region, which contained only 8.1 p.c. of the total labour force, accounted for 12.3 p.c. of the unemployed. The situation was very much the same in Quebec and in British Columbia where the corresponding percentages were 28.1 and 38.0, and 10.1 and 12.3, respectively. Conversely, Ontario and the Prairie region, with 37.1 p.c. and 16.6 p.c., respectively, of the labour force accounted for only 27.2 p.c. and 10.2 p.c., respectively, of the unemployed. This uneven distribution, which also prevailed during the whole 1959-68 period, was reflected in the regional unemployment rates. In 1968, the annual average unemployment rates were as follows: Atlantic 7.3 p.c., Quebec 6.5 p.c., Ontario 3.5 p.c., the Prairies 3.0 p.c., and British Columbia 5.9 p.c. Throughout the decade, unemployment rates for the Atlantic region, Quebec and British Columbia were substantially above the national average.

3.—Percentage Distribution of the Population 14 Years of Age or Over in the Labour Force and Non-labour Force Categories, by Sex, 1959-68

Year	Popu- lation (14 years of age or over)	Percentage Distribution of the Population 14 Years of Age or Over							
		Labour Force				Not in Labour Force			
		Employed		Unem- ployed	Total	Women Keeping House	Persons Going to School	Other	Total
		Agri- culture	Non- agri- culture						
MALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1959.....	5,785	11.3	64.2	5.6	81.0	...	7.2	11.7	19.0
1960.....	5,890	10.7	63.4	6.6	80.7	...	7.5	11.7	19.3
1961.....	5,991	10.4	62.7	6.7	79.8	...	8.1	12.1	20.2
1962.....	6,094	9.8	63.8	5.4	79.1	...	8.6	12.3	20.9
1963.....	6,215	9.3	64.2	5.0	78.5	...	9.0	12.5	21.5
1964.....	6,351	8.8	65.1	4.2	78.1	...	9.5	12.4	21.9
1965.....	6,505	8.0	66.4	3.4	77.9	...	9.9	12.2	22.1
1966.....	6,678	7.1	67.5	3.1	77.8	...	10.2	12.1	22.3
1967.....	6,876	7.1	66.9	3.6	77.5	...	10.3	12.2	22.5
1968.....	7,070	6.7	66.1	4.2	77.0	...	10.6	12.4	23.0
FEMALES									
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1959.....	5,820	0.8	25.1	0.8	26.7	62.4	6.4	4.5	73.3
1960.....	5,942	0.8	26.0	1.0	27.9	61.0	6.6	4.5	72.1
1961.....	6,061	1.0	26.6	1.1	28.7	59.9	6.9	4.5	71.3
1962.....	6,186	1.0	27.1	1.0	29.0	59.1	7.4	4.5	71.0
1963.....	6,320	1.1	27.5	1.0	29.6	58.1	7.9	4.4	70.4
1964.....	6,466	1.1	28.5	0.9	30.5	56.9	8.3	4.3	69.5
1965.....	6,623	1.1	29.4	0.8	31.3	55.6	8.6	4.5	68.7
1966.....	6,796	1.0	30.9	0.9	32.8	54.0	8.8	4.5	67.2
1967.....	6,997	1.0	31.8	1.0	33.8	53.2	8.8	4.2	66.2
1968.....	7,194	1.0	32.3	1.2	34.4	52.2	8.9	4.4	65.6

4.—Percentage Distribution of the Employed by Industrial Group, 1961-68

Year	Total Em- ployed	Percentage Distribution							
		Agri- culture	Other Primary Industries	Manu- facturing	Con- struction	Trans- portation and Other Utilities	Trade	Finance, Insurance and Real Estate	Service ¹
	'000	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1961.....	6,055	11.2	3.0	24.0	6.2	9.3	16.9	3.9	25.3
1962.....	6,225	10.6	2.9	24.1	6.3	9.4	16.9	4.0	25.8
1963.....	6,375	10.2	2.8	24.3	6.4	9.4	16.7	4.0	26.3
1964.....	6,609	9.5	3.0	25.0	6.2	8.9	16.7	4.0	26.7
1965.....	6,862	8.7	3.4	23.8	6.7	9.0	16.7	4.1	27.6
1966.....	7,152	7.6	3.1	24.4	7.0	8.7	16.5	4.2	28.5
1967.....	7,379	7.6	3.0	23.8	6.4	8.9	16.6	4.2	29.5
1968.....	7,537	7.2	2.9	23.3	6.2	8.9	16.7	4.3	30.4

¹ Includes public administration and defence.

5.—Percentage Distribution of the Employed by Major Occupational Group, 1961-68

Year	All Occupations Annual Average	Manag- erial	Profes- sional and Tech- nical	Clerical	Sales ¹	Service and Recre- ation
	No.	p.c.	p.c.	p.c.	p.c.	p.c.
1961.....	6,055	9.2	9.9	13.3	7.4	10.9
1962.....	6,225	9.3	10.6	13.3	7.3	10.9
1963.....	6,375	9.2	10.6	13.4	7.2	11.1
1964.....	6,609	9.2	10.6	13.4	7.4	11.7
1965.....	6,862	9.3	11.4	13.4	7.0	11.6
1966.....	7,152	9.4	12.2	14.1	6.7	11.4
1967.....	7,379	9.4	12.4	14.1	6.8	11.8
1968.....	7,537	9.5	13.0	14.6	6.8	12.0
	Transport- ation	Com- munication	Farmers and Farm Workers	Fishermen, Trappers, Loggers and Miners	Craftsmen, Production Process and Related Workers ²	Labourers and Un- skilled Workers
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1961.....	5.8	0.9	11.3	2.1	24.2	5.0
1962.....	5.6	0.9	10.6	1.9	24.7	4.8
1963.....	5.6	0.9	10.3	1.9	24.9	4.8
1964.....	5.6	0.8	9.6	2.1	24.6	4.9
1965.....	5.4	0.9	8.7	2.2	25.2	4.9
1966.....	4.8	0.9	7.7	2.0	26.1	4.8
1967.....	4.7	0.9	7.6	1.9	26.1	4.3
1968.....	4.6	0.9	7.3	1.8	25.3	4.1

¹ Includes commercial and financial occupations.² Includes manufacturing and mechanical and construction occupations.

6.—Estimates of Employment and Unemployment, by Region, 1959-68

Year	Atlantic		Quebec		Ontario		Prairies		British Columbia	
	Employ- ment	Unem- ployment	Employ- ment	Unem- ployment	Employ- ment	Unem- ployment	Employ- ment	Unem- ployment	Employ- ment	Unem- ployment
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1959..	482	59	1,620	138	2,198	103	1,049	35	521	36
1960..	492	59	1,639	164	2,249	128	1,069	47	516	48
1961..	507	64	1,652	168	2,269	132	1,100	53	527	49
1962..	516	62	1,713	139	2,317	105	1,129	46	551	39
1963..	522	55	1,762	142	2,382	94	1,138	44	571	39
1964..	542	46	1,827	124	2,473	83	1,162	37	605	34
1965..	566	45	1,912	109	2,548	66	1,196	31	639	28
1966..	586	40	2,016	100	2,651	69	1,222	26	678	32
1967..	593	42	2,080	116	2,745	89	1,238	29	723	39
1968..	596	47	2,082	145	2,830	104	1,280	39	750	47

Section 3.—Employment Statistics*

Subsection 1.—Statistics of Employment, Earnings and Hours

Monthly records of employment have been collected from larger business establishments since 1921. At that time a survey was instituted to provide employment index numbers which would serve as current economic indicators. In 1941 the survey was extended to provide information on payrolls and per capita wages and salaries and in 1944 it was further extended to provide data on hours of work and hourly and weekly wages. Also during the war period, separate records for men and women employees were established. Beginning with the January 1966 issues of *Employment and Average Weekly Wages and Salaries* and *Man-Hours and Hourly Earnings*, the data compiled are on a revised basis. A historical series (Catalogue No. 72-504) provides, on the revised basis, monthly and annual data from 1961-65. The revision has involved the publishing of employment indexes on the time base 1961=100 in place of the time base 1949=100. All data are compiled on the 1960 standard industrial classification instead of the 1948 standard industrial classification.

The survey now covers sectors of the following major industry divisions: forestry; mining (including milling); manufacturing; construction; transportation, communication and other utilities; trade; and finance, insurance and real estate. Also included are certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, and recreational and business services. The survey excludes agriculture, public administration and community services such as health and education. The coverage corresponds closely, therefore, to the business sector of the economy. Since the survey covers only firms employing 20 or more persons in any month of the year and excludes several industries, the employment records are published in the form of index numbers (1961=100).

The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees with the exception of homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, and incentive and cost-of-living bonuses. The statistics on hours relate to the straight and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

Employment.—Table 7 shows that, over the five-year period 1963-67, the industrial composite index of employment rose by 17.4 p.c.; service increased by 44.6 p.c., construction by 22.5 p.c., manufacturing by 16.1 p.c., trade by 21.5 p.c. and finance, insurance and real estate by 17.1 p.c. The increase in manufacturing was particularly significant in view of the fact that this industry accounts for over 40 p.c. of industrial employment as measured by the employment survey. During 1967 mining, trade, and transportation, communication and other utilities also showed some improvement while forestry, construction and manufacturing showed decreases, although that for manufacturing was very slight.

* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

7.—Annual Average Index Numbers of Employment, by Industrial Division, 1963-67, and Monthly Indexes 1967

NOTE.—These indexes are calculated as at the last pay period of each month, on the base 1961=100.

Year and Month	Forestry	Mining (incl. milling)	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade	Finance, Insurance and Real Estate	Service ¹	Industrial Composite
Averages—									
1963.....	96.9	97.9	106.1	100.0 ^c	100.7 ^a	103.5	107.6	106.1	104.4
1964.....	102.8	98.8	111.1	104.1 ^c	101.8 ^a	108.1	111.9	114.7	108.2
1965.....	104.1	105.1	117.2	118.4 ^c	104.8 ^a	114.3	116.6	125.9	114.3
1966.....	106.2	107.0 ^c	123.5	128.9 ^c	107.5 ^a	122.0 ^c	120.5	139.1	120.7
1967.....	102.3	109.0	123.2	122.5	111.0	125.8	126.0	153.4	122.6
1967—									
January.....	101.7	106.3	122.1	117.0	105.0	122.5	122.2	140.3	119.0
February.....	94.0	106.5	122.0	113.1	104.8	120.2	122.4	142.0	118.3
March.....	79.2	107.8	122.0	121.6	103.6	119.7	118.6	133.6	116.7
April.....	67.8	104.8	121.7	115.6	109.0	122.7	123.7	147.0	119.3
May.....	91.2	108.9	122.9	123.3	112.3	124.2	125.0	154.8	122.3
June.....	113.4	112.5	124.7	128.0	115.3	126.1	126.4	160.7	125.3
July.....	118.7	113.6	124.3	133.5	116.5	124.5	127.2	163.1	125.8
August.....	124.5	113.5	126.7	135.4	115.9	124.4	128.1	163.9	127.0
September.....	120.0	110.0	125.5	133.7	112.7	126.9	127.1	160.4	125.9
October.....	115.9	108.6	123.3	132.6	113.4	128.8	128.6	158.6	124.8
November.....	107.5	109.1	123.2	125.5	111.8	132.9	128.7	153.0	124.3
December.....	92.5	107.3	119.8	103.4	108.1	134.6	128.4	149.2	120.5

¹ Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

8.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1963-67

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Industry	1963	1964	1965	1966	1967
Forestry.....	96.9	102.8	104.1	106.2	102.3
Mining (incl. milling).....	97.9	98.8	105.1	107.0	109.0
Metals.....	96.1	96.9	103.2	103.4	105.0
Gold.....	92.9	88.1	81.0	72.1	62.7
Copper-gold-silver.....	101.8	101.9	109.6	120.6	125.8
Iron.....	113.3	119.8	139.8	141.0	135.9
Mineral fuels.....	99.0	97.5	100.6	100.7	103.6
Coal.....	93.0	89.0	91.3	87.5	83.5
Petroleum and gas wells.....	104.0	106.1	109.7	113.8	123.8
Non-metals (except fuels).....	105.3	104.7	106.7	109.9	113.9
Asbestos.....	100.7	97.4	95.9	100.4	103.5
Manufacturing.....	106.1	111.1	117.2	123.5	123.2
Durable goods.....	109.5	116.7	126.0	134.7	133.9
Non-durable goods.....	103.4	106.6	110.1	114.4	114.5
Foods and beverages.....	101.3	103.3	106.6	109.9	110.4
Slaughtering and meat processing.....	98.8	100.7	104.2	101.4	104.4
Dairy products.....	99.5	102.1	105.1	106.3	106.7
Fish products.....	107.5	107.6	117.3	127.5	121.7
Fruit and vegetable processing.....	108.0	112.9	118.8	124.8	120.9
Grain mill products.....	96.1	96.7	94.5	100.0	103.5
Biscuits.....	100.5	102.5	103.8	106.1	108.1
Bakeries.....	99.0	100.1	102.2	103.8	99.7
Confectionery.....	105.4	104.8	110.9	116.1	115.9
Soft drinks.....	104.6	108.3	110.0	117.6	124.6
Distilleries.....	95.0	96.1	98.6	108.2	115.7
Breweries.....	97.0	99.0	98.9	99.1	98.9
Tobacco processing and products.....	104.0	102.0	99.2	99.5	105.1
Rubber products.....	107.7	113.3	117.4	123.6	122.0

**8.—Annual Average Index Numbers of Employment, by Industrial Division and Group,
1963-67—continued**

Industry	1963	1964	1965	1966	1967
Manufacturing—concluded					
Leather products.....	101.7	102.4	101.7	103.5	98.7
Shoes (except rubber).....	100.1	98.2	96.0	98.3	94.4
Luggage, handbag and small leather goods.....	112.2	121.2	126.3	129.7	123.8
Textile products.....	109.3	115.8	114.2	120.0	119.9
Cotton yarn and cloth.....	102.6	106.9	106.1	96.3	100.2
Woolen yarn and cloth.....	109.8	112.8	111.7	110.4	97.3
Synthetic textiles.....	114.8	127.1	136.3	136.3	136.0
Knitting mills.....	103.2	106.3	111.5	116.7	110.5
Hosiery.....	98.0	98.6	101.1	101.6	98.1
Other knitting mills.....	105.6	110.8	117.9	125.5	117.7
Clothing.....	104.4	109.9	112.5	114.5	110.9
Men's clothing.....	108.4	112.9	118.5	120.2	116.5
Women's clothing.....	102.3	110.2	113.3	116.6	114.9
Wood products.....	107.4	111.2	113.4	113.1	108.3
Saw, shingle and planing mills.....	105.2	109.2	111.6	108.9	103.9
Furniture and fixtures.....	108.4	113.1	122.8	132.5	128.6
Household furniture.....	108.8	116.1	126.5	137.0	131.8
Paper and allied industries.....	103.2	106.8	111.1	117.5	118.4
Pulp and paper mills.....	101.2	104.9	108.6	114.9	115.0
Printing, publishing and allied industries.....	101.6	101.4	105.4	110.9	113.6
Commercial printing.....	101.0	102.9	105.3	110.7	114.3
Printing and publishing.....	102.1	99.4	105.2	100.4	110.6
Primary metal industries.....	104.9	112.3	118.7	125.0	124.4
Iron and steel mills.....	112.9	121.9	129.6	133.8	129.5
Iron foundries.....	112.3	119.0	131.9	145.5	139.9
Smelting and refining.....	93.6	99.8	105.5	110.5	114.8
Metal fabricating industries.....	108.9	114.5	125.7	136.2	133.6
Fabricated structural metals.....	96.6	99.7	119.2	134.4	120.5
Ornamental and architectural metals.....	112.4	119.3	125.2	130.7	123.5
Metal stamping, pressing and coating.....	112.5	119.1	128.7	136.3	138.1
Wire and wire products.....	110.0	120.3	132.3	136.0	134.7
Hardware, tools and cutlery.....	117.4	128.6	138.3	149.7	148.4
Heating equipment.....	104.7	105.2	107.1	110.9	109.4
Miscellaneous metal fabricating.....	111.5	118.8	127.1	137.4	134.5
Machinery (except electrical).....	114.8	121.4	137.1	147.7	149.7
Agricultural implements.....	111.6	114.8	133.8	142.7	141.0
Miscellaneous machinery and equipment.....	117.0	126.0	142.1	152.0	150.8
Office and store machinery.....	111.5	112.0	124.6	141.4	162.2
Transportation equipment.....	111.7	124.2	137.5	149.3	151.8
Aircraft and parts.....	88.4	96.8	93.4	114.1	129.1
Motor vehicles.....	123.3	141.7	163.7	171.2	168.0
Assembling.....	127.0	145.3	170.8	174.8	166.2
Parts and accessories.....	119.2	138.9	158.0	168.0	168.7
Shipbuilding and repair.....	123.7	118.4	128.5	135.6	128.8
Electrical products.....	114.5	119.4	128.1	142.0	144.2
Major appliances (incl. non-electric).....	105.3	114.7	119.8	125.0	119.7
Household radios and televisions.....	120.1	129.3	106.9	120.6	127.9
Communications equipment.....	118.9	121.8	139.5	150.5	167.7
Non-metallic mineral products.....	108.3	113.1	121.3	125.5	119.2
Concrete products.....	114.4	124.3	143.1	142.9	122.2
Clay products.....	102.2	105.3	110.0	113.0	108.5
Glass and glass products.....	109.1	111.9	121.4	124.5	125.2
Petroleum and coal products.....	96.6	97.0	97.2	99.7	102.7
Petroleum refineries.....	92.9	91.8	89.6	88.7	94.0
Chemicals and chemical products.....	102.0	105.5	111.1	117.1	118.8
Pharmaceuticals and medicines.....	103.8	107.7	112.9	121.9	131.2
Paints and varnishes.....	97.1	98.5	99.9	105.3	108.0
Soap and cleaning compounds.....	106.4	104.6	104.1	103.1	101.8
Industrial chemicals.....	102.0	106.1	111.5	116.3	118.3
Miscellaneous manufacturing industries.....	110.8	117.1	121.5	131.2	133.0
Construction.....	100.0	104.1	118.4	128.9	122.5
Building.....	101.0	105.2	120.6	131.4	127.8
General contractors.....	96.6	100.5	114.7	123.5	115.2
Special trade contractors.....	106.0	110.6	127.0	140.2	141.5
Engineering.....	98.4	102.0	112.5	124.5	113.3
Highways, bridges and streets.....	92.8	99.3	105.1	106.6	97.0
Other engineering.....	106.0	105.8	120.3	147.0	134.2
Transportation, Communication and Other Utilities.....	100.7	101.8	104.8	117.5	111.0
Transportation.....	99.3	100.0	102.4	103.9	107.8
Air transport and services.....	98.3	100.8	104.2	119.1	136.0
Water transport and services.....	100.2	102.7	105.2	106.6	102.9

5. —Annual Average Index Numbers of Employment, by Industrial Division and Group, 1963-67—concluded

Industry	1963	1964	1965	1966	1967
Transportation, Communication, etc.—concluded					
Transportation—concluded					
Railway transport.....	95.6	96.5	96.1	94.9	96.6
Maintenance of equipment.....	97.0	101.3	101.9	100.5	102.0
Maintenance of way and structures.....	91.0	91.5	85.5	83.7	84.5
Railway transportation.....	96.4	96.5	97.8	97.0	99.1
Truck transport.....	103.7	108.2	118.2	119.4	129.4
Bus transport, interurban and rural.....	95.7	97.7	102.5	110.8	115.6
Urban transit.....	99.1	99.4	101.8	106.3	112.9
Highway and bridge maintenance.....	97.9	95.6	103.6	105.7	108.1
Storage.....	99.1	104.4	107.0	113.5	114.8
Grain elevators.....	98.5	103.8	104.9	111.4	110.7
Other storage and warehousing.....	101.4	106.8	114.5	119.2	126.0
Communication.....	103.4	105.5	108.9	116.5	118.8
Radio and television broadcasting.....	105.0	108.7	111.6	117.2	124.0
Telephone.....	103.8	106.1	110.9	122.0	122.2
Telegraph and cable.....	99.0	97.4	96.4	95.9	93.0
Post office.....	103.5	105.5	107.9	112.3	118.1
Electric power, gas and water.....	105.5	106.3	108.6	109.3	113.1
Electric power.....	104.1	105.0	107.4	110.3	115.0
Gas distribution.....	112.9	111.5	112.6	102.0	102.5
Trade.....	103.5	108.1	114.3	122.0	125.8
Wholesale.....	102.4	105.4	110.8	117.5	121.1
Retail.....	104.4	109.6	116.2	124.6	128.4
Food stores.....	104.9	112.3	117.5	125.9	133.0
Department stores.....	104.8	110.2	115.5	125.8	128.6
Variety stores.....	98.3	105.2	118.7	125.1	119.5
Automotive product stores.....	107.5	113.7	124.7	131.5	134.8
Finance, Insurance and Real Estate.....	107.6	111.9	116.6	120.5	126.0
Financial institutions.....	108.4	113.6	120.0	124.4	128.7
Insurance and real estate.....	105.8	108.8	111.5	114.9	122.3
Insurance carriers.....	105.0	107.4	109.6	112.0	119.3
Service.....	106.1	114.7	125.9	139.1	153.4
Recreational services.....	104.5	109.6	116.9	127.5	135.4
Business services.....	109.0	120.6	137.3	156.7	167.4
Personal services.....	104.9	112.1	120.0	130.4	141.4
Miscellaneous services.....	107.4	118.5	136.9	153.9	188.3
Industrial Composite.....	104.4	108.2	114.3	120.7	122.6

9.—Annual Average Index Numbers of Employment, by Province, 1963-67, and Monthly Indexes 1967

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Averages—											
1963.....	102.0	101.8	101.1	100.6	103.0	105.4	101.6	102.4	102.3	104.9	104.4
1964.....	107.6	105.9	103.6	104.6	107.5	110.1	103.4	105.1	106.1	109.4	108.2
1965.....	118.0	112.2	108.6	109.7	112.8	116.5	106.0	110.4	112.6	118.2	114.3
1966.....	126.2	124.4	113.0	115.2	118.1	123.3	111.2	116.5	120.5	126.2	120.7
1967.....	121.7	124.9	113.3	116.5	119.4	125.1	115.0	119.5	126.2	128.7	122.6
1967—											
January.....	114.7	108.5	109.1	111.1	116.1	122.9	109.9	111.3	120.3	123.0	119.0
February.....	113.0	98.4	107.7	108.4	115.2	122.2	109.5	111.0	120.6	123.4	118.3
March.....	108.8	101.7	108.3	107.4	115.2	122.4	109.9	111.6	121.8	125.7	118.6
April.....	105.7	106.0	108.7	104.0	116.8	123.1	111.4	113.3	119.8	126.3	119.3
May.....	114.5	121.5	112.4	112.2	119.7	124.9	115.5	119.6	125.2	129.3	122.3
June.....	124.8	135.3	116.4	121.7	122.3	126.7	118.4	124.1	130.7	132.6	125.3
July.....	132.5	146.6	117.4	126.2	122.7	125.9	119.8	126.1	132.6	135.2	125.8
August.....	137.2	142.0	117.5	128.4	123.8	127.7	119.7	126.1	133.2	135.4	127.0
September.....	134.1	140.7	117.6	124.2	122.7	127.1	119.1	124.7	130.4	133.1	125.9
October.....	130.0	136.6	116.7	121.3	122.5	126.3	118.0	125.0	128.4	129.4	124.8
November.....	127.8	135.1	116.1	118.4	120.8	127.5	116.6	122.8	126.9	127.5	124.3
December.....	115.6	126.2	111.9	114.3	115.8	124.7	112.0	118.0	124.4	124.2	120.5

10.—Annual Average Index Numbers of Employment, by Metropolitan Area, 1963-67, and Monthly Indexes 1967

NOTE.—These indexes refer to the last week of each month and are on the base 1961=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
Averages—								
1963.....	103.0	106.4	105.8	103.2	107.3	105.5	101.2	104.3
1964.....	107.7	108.1	110.5	106.1	113.4	116.8	104.1	109.6
1965.....	114.0	113.0	115.8	111.5	119.8	132.7	107.6 ^r	117.9
1966.....	120.8	115.8	123.6 ^r	117.4 ^r	123.7	148.5 ^r	114.3 ^r	124.2 ^r
1967.....	122.6	116.3	126.0	123.5	120.8	148.2	117.3	127.7
1967—								
January.....	120.1	112.5	123.9	118.1	121.9	145.3	114.4	122.9
February.....	119.8	112.0	123.2	117.3	120.5	144.3	113.2	123.1
March.....	120.8	113.5	123.6	118.4	119.7	145.0	113.8	124.9
April.....	122.5	113.6	124.6	120.6	121.1	146.3	114.9	126.3
May.....	123.1	118.3	125.8	124.3	118.4	149.7	117.5	128.1
June.....	124.6	118.7	126.8	125.7	119.8	150.1	119.4	130.7
July.....	124.6	119.2	125.7	126.0	121.8	147.9	120.0	131.4
August.....	124.9	119.9	127.4	126.6	123.5	155.4	119.6	131.3
September.....	124.0	120.5	127.9	125.5	121.6	150.1	119.7	130.1
October.....	125.0	117.2	127.8	125.5	120.7	146.8	120.0	129.5
November.....	123.7	118.2	128.9	127.9	121.6	156.3	119.6	128.6
December.....	119.5	112.4	126.1	126.0	118.6	153.8	115.7	126.5

Weekly Wages and Salaries.—Average weekly wages and salaries have increased substantially in the years for which current payroll statistics have been collected, rising from \$23.44 in 1939 to \$96.34 in 1966 and \$102.76 in 1967. The upward movement gained momentum after the end of the War and average annual increases from 1946 to 1952 were more than twice as great as those between 1939 and 1946. After 1952 the rate of increase, in terms of year-to-year percentage changes, fell slightly below that recorded during the war years, particularly between 1959 and 1962, when average earnings rose at rates of about 3 p.c. per annum. Over the next four years the rate increased moderately and earnings in 1967 were 6.7 p.c. higher than in 1966.

11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1965-67

Industry, Province and Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1965	1966	1967	1965	1966	1967
Industry				\$	\$	\$
Forestry.....	104.1	106.2	102.3	96.71	104.79	113.64
Mining (incl. milling).....	105.1	107.0	109.0	111.53	119.51	129.13
Manufacturing.....	117.2	123.5	123.2	94.78	100.16	106.53
Durable goods ¹	126.0	134.7	133.9	102.97	107.82	114.07
Non-durable goods ¹	110.1	114.4	114.5	87.24	92.93	99.95
Construction.....	114.4	128.9	122.5	108.40	120.21	130.83
Transportation, communication and other utilities	104.8	107.5	111.0	98.84	103.55	113.15
Trade.....	114.3	122.0	125.8	73.49	76.89	81.24
Finance, insurance and real estate.....	116.6	120.5	126.0	88.29	93.04	99.02
Service.....	125.8	139.1	153.4	65.76	70.25	74.98
Industrial Composite.....	114.3	120.7	122.6	91.01	96.34	102.76

¹ Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

11.—Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1965-67—concluded

Industry, Province and Urban Area	Employment (1961=100)			Average Weekly Wages and Salaries		
	1965	1966	1967	1965	1966	1967
Province				\$	\$	\$
Newfoundland.....	118.0	126.3	121.7	80.22	84.68	90.92
Prince Edward Island.....	112.2	124.3	124.9	62.48	64.18	70.58
Nova Scotia.....	108.6	113.0	113.3	73.43	77.04	82.64
New Brunswick.....	109.7	115.2	116.5	74.76	79.21	85.25
Quebec.....	112.9	118.1	119.4	88.62	94.83	101.16
Ontario.....	116.5	123.3	125.1	94.41	99.40	105.86
Manitoba.....	106.1	111.2	115.0	82.28	84.45	91.95
Saskatchewan.....	110.4	116.5	119.5	84.90	89.11	95.77
Alberta.....	112.6	120.5	126.2	89.88	94.87	100.86
British Columbia.....	118.2	126.1	128.7	100.71	107.42	114.50
Urban Area						
Corner Brook, Nfld.....	114.2	113.1	109.4	89.92	97.91	103.68
St. John's, Nfld.....	126.3	139.1	138.6	69.94	75.99	80.51
Halifax, N.S.....	108.7	112.1	114.1	76.21	79.33	84.67
Sydney, N.S.....	99.9	99.8	98.8	88.77	89.26	92.97
Moncton, N.B.....	110.2	114.4	116.2	70.42	73.78	80.58
Saint John, N.B.....	104.4	109.2	110.3	76.36	78.79	84.80
Chicoutimi, Que.....	102.7	110.2	109.9	105.51	114.03	121.05
Drummondville, Que.....	125.9	118.5	119.2	73.47	76.61	82.53
Granby, Que.....	104.8	110.2	111.2	74.39	78.98	83.28
Montreal, Que.....	114.0	120.8	122.6	90.20	96.34	102.40
Ottawa, Ont.-Hull, Que.....	111.5	117.4	123.5	84.51	89.64	95.86
Quebec, Que.....	113.0	115.8	116.3	77.72	82.48	87.13
Rouyn-Noranda, Que.....	127.4	114.0	108.7	87.65	97.08	101.95
St. Hyacinthe, Que.....	118.8	124.6	124.1	69.08	72.78	75.98
St. Jean, Que.....	116.2	126.2	128.2	76.12	80.56	85.76
St. Jérôme, Que.....	120.4	114.0	100.9	71.18	75.11	83.91
Shawinigan, Que.....	106.1	109.5	100.6	94.42	102.54	104.60
Sherbrooke, Que.....	116.7	116.2	118.7	77.14	81.94	85.91
Sorel, Que.....	146.1	158.1	154.0	98.84	106.40	111.49
Thetford Mines, Que.....	96.5	100.7	104.5	97.11	103.04	106.49
Trois-Rivières, Que.....	112.2	116.9	115.3	81.74	91.11	94.73
Valleyfield, Que.....	119.9	135.2	134.1	89.46	96.42	103.38
Belleville, Ont.....	109.2	114.9	116.7	80.90	85.10	89.37
Brampton, Ont.....	200.0	226.4	246.1	92.39	99.73	104.19
Brantford, Ont.....	126.3	134.1	133.9	88.46	92.79	99.15
Brockville, Ont.....	119.8	135.3	140.9	90.09	93.69	101.56
Chatham, Ont.....	122.0	125.0	129.5	90.41	95.04	102.99
Cornwall, Ont.....	117.0	127.1	130.0	90.66	93.95	98.55
Fort William-Port Arthur, Ont.....	116.2	126.1	126.9	89.67	98.41	102.36
Guelph, Ont.....	123.2	132.3	136.1	85.02	89.35	94.90
Hamilton, Ont.....	119.8	128.7	120.8	99.28	103.69	109.31
Kingston, Ont.....	122.0	125.2	121.7	89.95	94.82	100.76
Kitchener, Ont.....	129.1	141.0	141.9	83.42	87.63	93.16
London, Ont.....	118.8	124.0	124.3	86.14	91.60	97.54
Niagara Falls, Ont.....	110.6	112.3	112.3	92.53	95.78	99.51
North Bay, Ont.....	104.0	103.8	104.4	91.98	95.42	104.50
Oshawa, Ont.....	148.1	142.3	135.8	117.59	113.10	118.89
Peterborough, Ont.....	124.2	132.8	134.9	98.34	103.44	107.23
St. Catharines, Ont.....	131.9	139.8	140.8	106.39	106.81	113.51
St. Thomas, Ont.....	130.4	137.5	138.1	83.41	88.51	93.64
Sarnia, Ont.....	111.2	124.7	130.2	116.35	127.44	137.46
Sault Ste. Marie, Ont.....	115.7	120.1	119.0	110.92	112.71	117.86
Stratford, Ont.....	129.7	139.6	139.7	81.45	84.97	89.50
Sudbury, Ont.....	100.0	100.4	109.8	101.90	108.66	122.96
Timmins, Ont.....	93.8	96.6	83.9	82.06	99.46	98.08
Toronto, Ont.....	115.8	123.6	126.0	94.53	100.27	106.64
Welland, Ont.....	110.5	111.2	112.2	108.22	112.82	119.99
Windsor, Ont.....	132.7	148.5	148.2	107.30	112.48	117.01
Woodstock, Ont.....	129.9	137.3	144.2	87.09	89.88	96.16
Winnipeg, Man.....	107.6	114.3	117.3	79.07	80.63	86.81
Regina, Sask.....	116.3	117.5	119.4	82.77	87.14	92.31
Saskatoon, Sask.....	116.2	126.8	140.9	78.30	81.70	90.30
Calgary, Alta.....	115.3	126.1	134.9	89.80	93.70	100.41
Edmonton, Alta.....	117.4	125.6	130.8	84.10	88.94	94.95
Vancouver, B.C.....	117.9	124.2	127.7	97.83	103.62	109.69
Victoria, B.C.....	120.0	122.8	125.9	88.18	90.76	97.49

12.—Annual Average Weekly Wages and Salaries, by Industrial Division, 1963-67, and Monthly Averages 1967

Year and Month	Forestry	Mining (incl. milling)	Manufacturing	Construction	Transportation, Communication and Other Utilities	Trade	Finance, Insurance and Real Estate	Service ¹	Industrial Composite
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Averages—									
1963.....	87.02	101.96	86.90	95.27	89.71	68.80	77.63	60.44	83.27
1964.....	92.13	105.73	90.42	100.06	93.32	71.07	81.88	62.30	86.51
1965.....	96.81	111.53	94.78	107.92	98.77	73.49	88.29	65.76	91.01
1966.....	104.78	119.55	100.13	120.42	103.41	76.86	93.00	70.18	96.30
1967.....	113.64	129.13	106.53	130.83	113.15	81.24	99.02	74.98	102.76
1967—									
January.....	107.36	126.46	103.06	128.46	109.27	78.41	95.74	73.14	99.57
February.....	114.62	128.00	103.94	130.14	111.49	79.92	95.95	73.91	100.85
March.....	114.78	127.62	104.73	125.85	110.63	80.24	99.17	74.20	100.98
April.....	122.30	128.16	106.05	132.78	111.17	81.04	99.19	74.60	102.32
May.....	109.45	127.87	105.86	130.68	111.71	81.45	99.35	74.49	102.19
June.....	105.90	128.92	106.60	132.25	112.59	82.14	99.81	75.23	102.96
July.....	109.10	127.25	106.12	133.59	113.82	82.51	100.08	76.31	103.35
August.....	108.06	128.62	106.73	135.13	113.52	82.23	99.83	76.41	103.66
September.....	118.69	130.39	108.45	135.98	115.28	82.17	99.53	75.89	104.77
October.....	119.82	132.52	109.32	134.74	115.92	81.83	99.13	76.44	105.10
November.....	124.72	133.59	109.71	134.62	116.42	81.24	99.73	77.09	105.26
December.....	112.72	133.36	107.83	113.37	115.38	81.56	100.44	76.54	102.49

¹ Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

Hours and Earnings of Hourly Rated Wage-Earners.—The monthly survey of employment and payrolls covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid. These wage-earners are mainly hourly rated production workers; information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly wage and salary statistics.

During the period 1963-67, there was little change in average weekly hours but average hourly and weekly wages rose substantially. For the most part, upward wage-rate revisions in all industries were responsible for the increases. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earnings. From 1963 to 1967, average weekly wages rose 21.8 p.c. in manufacturing, 26.9 p.c. in mining and 39.6 p.c. in construction. Average hourly earnings increased 23.1 p.c. in manufacturing, 26.8 p.c. in mining and 39.3 p.c. in construction. In construction, 1967 average hourly earnings of \$3.12 and average weekly wages of \$128.76 represented increases of 11.4 p.c. and 9.1 p.c., respectively, over the 1966 levels.

13.—Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1963-67, and Monthly Averages 1967

Year and Month	All Manufactures			Mining (incl. milling)			Construction		
	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages	Average Weekly Hours	Average Hourly Earnings	Average Weekly Wages
	No.	\$	\$	No.	\$	\$	No.	\$	\$
Averages—									
1963.....	40.8	1.95	79.51	42.0	2.24	93.87	41.2	2.24	92.20
1964.....	41.0	2.02	82.96	42.2	2.31	97.43	41.4	2.35	97.39
1965.....	41.1 ^r	2.12	86.94 ^r	42.4 ^r	2.43	102.92 ^r	41.5 ^r	2.53 ^r	105.11 ^r
1966.....	40.8	2.25	91.65	42.2 ^r	2.60 ^r	109.77 ^r	42.2 ^r	2.80 ^r	118.06 ^r
1967.....	40.3	2.40	96.84	41.9	2.84	119.09	41.3	3.12	128.76
1967—									
January.....	40.1	2.33	93.26	42.5	2.76	117.11	41.0	3.07	125.80
February.....	40.2	2.35	94.23	42.7	2.78	118.87	41.3	3.09	127.47
March.....	40.1	2.37	95.02	42.1	2.80	117.98	39.2	3.11	122.05
April.....	40.5	2.38	96.50	41.9	2.81	117.62	41.3	3.18	131.07
May.....	40.3	2.38	96.06	42.0	2.82	118.29	41.2	3.13	128.67
June.....	40.6	2.39	97.13	42.3	2.83	119.78	42.4	3.08	130.66
July.....	40.2	2.40	96.45	40.9	2.87	117.45	43.0	3.08	132.33
August.....	40.5	2.40	97.43	41.7	2.85	118.71	43.5	3.09	134.07
September.....	40.8	2.43	99.20	41.7	2.88	120.23	43.2	3.12	134.81
October.....	40.8	2.45	99.88	42.2	2.90	122.34	42.2	3.15	133.02
November.....	40.7	2.46	100.18	42.4	2.92	123.81	41.6	3.19	132.93
December.....	38.7	2.50	96.78	41.0	2.97	121.90	33.2	3.17	105.24

14.—Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Selected Urban Areas, 1965-67

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Wages		
	1965	1966	1967	1965	1966	1967	1965	1966	1967
	No.	No.	No.	\$	\$	\$	\$	\$	\$
Industry									
Mining (incl. milling).....	42.4	42.2	41.9	2.43	2.60	2.84	102.92	109.77	119.09
Metal mining.....	41.8	41.5	41.3	2.52	2.70	2.98	105.19	112.21	122.79
Coal mining.....	41.3	42.5	42.6	1.96	2.02	2.13	80.78	85.61	90.68
Manufacturing.....	41.1	40.8	40.3	2.12	2.25	2.40	86.94	91.65	96.84
Durable goods ¹	41.7	41.3	40.8	2.30	2.43	2.58	96.16	100.31	105.32
Non-durable ¹	40.4	40.3	39.8	1.93	2.06	2.22	77.92	82.92	88.37
Construction.....	41.5	42.2	41.3	2.53	2.80	3.12	105.11	118.06	128.76
Building.....	39.5	40.0	39.3	2.62	2.86	3.17	103.63	114.27	124.53
Engineering.....	45.8	46.5	45.3	2.36	2.69	3.03	108.15	125.28	137.15
Other—									
Urban transit.....	42.7	42.9	42.8	2.45	2.66	2.91	104.63	114.33	124.55
Highway and bridge maintenance.....	40.3	40.9	39.9	1.92	20.1	2.22	77.32	82.37	88.71
Hotels, restaurants and taverns.....	36.1	35.1	34.2	1.22	1.31	1.39	44.16	45.93	47.57
Laundries, cleaners and pressers.....	39.2	39.0	38.8	1.23	1.31	1.40	48.07	50.96	54.51

¹ Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

14.—Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries and Selected Urban Areas, 1965-67—concluded

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Wages		
	1965	1966	1967	1965	1966	1967	1965	1966	1967
	No.	No.	No.	\$	\$	\$	\$	\$	\$
Province Manufacturing									
Newfoundland.....	41.5	41.0	40.8	1.73	1.90	2.06	71.73	77.69	84.01
Nova Scotia.....	40.7	40.6	39.8	1.77	1.85	1.94	72.01	75.11	77.37
New Brunswick.....	41.6	41.9	41.1	1.75	1.86	2.00	72.78	77.70	82.28
Quebec.....	41.8	41.8	41.1	1.88	2.02	2.16	78.62	84.25	88.81
Ontario.....	41.2	40.7	40.3	2.24	2.37	2.52	92.35	96.41	101.58
Manitoba.....	40.3	40.0	39.5	1.84	1.94	2.14	74.17	77.72	84.44
Saskatchewan.....	40.2	39.8	39.6	2.18	2.29	2.47	87.70	90.99	97.82
Alberta.....	40.2	39.9	39.5	2.14	2.27	2.45	86.13	90.37	96.83
British Columbia.....	37.9	37.7	37.7	2.62	2.78	3.01	99.50	104.93	113.20
Selected Urban Area Manufacturing									
Montreal.....	41.2	41.1	40.5	1.93	2.05	2.21	79.37	84.30	89.28
Toronto.....	40.9	40.9	40.4	2.15	2.29	2.43	88.23	93.56	98.47
Hamilton.....	40.7	40.2	39.9	2.50	2.64	2.79	101.73	105.83	111.41
Windsor.....	42.5	42.3	41.8	2.69	2.81	2.95	114.31	118.85	123.63
Winnipeg.....	40.2	39.8	39.3	1.82	1.92	2.10	73.34	76.54	82.59
Vancouver.....	37.9	37.6	37.6	2.55	2.70	2.90	96.57	101.29	108.86

Subsection 2.—Earnings and Hours of Work in Manufacturing*

Since 1946 an annual survey of earnings and hours of work in manufacturing has been conducted using (since 1948) the last week of October as the survey week. Information is collected during this normal or representative working week of the year, following generally the same concepts, definitions and coverage as in the larger establishment monthly employment survey. If strikes or other unusual working conditions distort the norm for this week, a more suitable week is substituted. Over the whole period, earnings and hours of work in manufacturing have been reported by sex and category and since 1951 figures have been available for clerical and related workers as distinct from other salaried employees. In addition, the distribution of employees by weekly earnings has been collected periodically since 1950 and the distribution of wage-earners by hours worked or paid for was collected each year from 1946 to 1949 and periodically thereafter.

However, Tables 15 and 16 give figures for 1963-67 only, since at this point there was a break in continuity with previous years. The new establishment concept introduced in 1961 drew into the manufacturing universe some activity reports, such as sales branches, which formerly reported to other industries; these are now coded to manufacturing when they form part of an establishment, the principal activity of which is manufacturing. The survey was not carried out in 1961 and 1962 and revised figures are available only from 1963. Also, it should be noted that the 1967 survey data were collected and compiled on the revised (1960) standard industrial classification basis which classifies the manufacturing industries into 20 major industrial groups, replacing the 17 groups of the 1948 classification system. The new classification is used in Tables 17 and 18.

* More detailed information is given in DBS annual report *Earnings and Hours of Work in Manufacturing* (Catalogue No. 72-204).

15.—Average Earnings of Male and Female Employees in Manufacturing, Survey Week 1963-67, and Percentage Increases over Previous Year

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962 (see p. 776).

Year	Male		Female		Both Sexes	
	Average Earnings	Increase over Previous Year	Average Earnings	Increase over Previous Year	Average Earnings	Increase over Previous Year
AVERAGE HOURLY WAGES						
	\$	p.c.	\$	p.c.	\$	p.c.
1963.....	2.13	..	1.27	..	1.94	..
1964.....	2.21	3.7	1.33	4.7	2.02	4.1
1965.....	2.33	5.4	1.41	6.0	2.14	5.9
1966.....	2.50	7.3	1.51	7.1	2.29	7.0
1967.....	2.66	6.4	1.63	7.9	2.44	10.9
AVERAGE WEEKLY WAGES						
	\$	p.c.	\$	p.c.	\$	p.c.
1963.....	90.04	..	49.31	..	80.79	..
1964.....	94.08	4.5	51.45	4.3	84.37	4.4
1965.....	99.50	5.8	54.88	6.7	89.39	5.9
1966.....	105.45	6.0	58.01	5.7	94.52	5.7
1967.....	111.25	5.5	61.59	6.2	99.91	5.7
AVERAGE WEEKLY SALARIES						
	\$	p.c.	\$	p.c.	\$	p.c.
1963.....	128.67	..	64.24	..	111.40	..
1964.....	133.64	3.9	66.51	3.5	115.59	3.8
1965.....	139.01	4.0	69.35	4.3	120.30	4.1
1966.....	147.95	6.4	75.26	8.5	128.79	7.1
1967.....	155.76	5.3	80.21	6.6	135.94	5.6

16.—Proportions of Male and Female Employees classified as Salaried Staff, Survey Week 1962-67

NOTE.—Survey week is the last week of October. This survey was not conducted in 1961 and 1962 (see p. 776).

Year	Durable Goods			Non-durable Goods			All Manufacturing		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1963.....	21.7	43.9	24.5	25.0	22.2	24.0	23.3	27.4	24.3
1964.....	21.4	43.6	24.2	25.2	22.1	24.1	23.2	27.3	24.2
1965.....	21.1	42.4	23.8	25.6	22.3	24.5	23.1	27.4	24.1
1966.....	23.1	42.9	25.8	28.0	23.4	26.5	25.3	28.8	26.1
1967.....	24.4	44.5	27.1	29.0	24.8	27.6	26.5	30.2	27.4

17.—Average Hours and Earnings of Wage-Earners in Manufacturing, by Industry, Province and Selected Urban Area, Survey Week 1967

NOTE.—Survey week is the last week of October; based on the revised standard industrial classification.

Industry, Province and Urban Area	Average Weekly Hours			Average Hourly Earnings			Average Weekly Earnings		
	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes
	No.	No.	No.	\$	\$	\$	\$	\$	\$
Industry									
Food and beverages.....	41.7	36.7	40.3	2.34	1.57	2.15	97.61	57.59	86.83
Tobacco processing and products.....	38.2	36.1	37.1	2.88	2.59	2.74	110.07	93.26	101.47
Rubber products.....	43.7	38.9	42.7	2.73	1.73	2.54	119.37	67.44	108.19
Leather products.....	40.4	38.3	39.3	1.98	1.41	1.69	80.17	54.16	66.57
Textile products.....	42.3	39.7	41.4	2.09	1.62	1.93	88.49	64.45	80.10
Knitting mills.....	45.3	39.1	40.8	1.88	1.42	1.66	84.97	55.30	63.59
Clothing.....	39.0	36.6	37.1	2.29	1.48	1.66	89.16	54.16	61.33
Wood products.....	40.9	39.9	40.9	2.34	1.67	2.31	95.85	66.48	94.45
Furniture and fixtures.....	43.5	40.2	43.0	2.03	1.56	1.97	88.34	62.80	84.61
Paper and allied industries.....	42.1	38.4	41.8	3.04	1.68	2.92	128.03	64.60	121.77
Printing, publishing and allied industries.....	39.0	36.2	38.3	3.19	1.75	2.88	124.41	63.50	110.59
Primary metal industries.....	41.0	39.4	40.9	3.04	2.38	3.02	124.46	83.74	123.76
Metal fabricating industries.....	42.0	39.4	41.7	2.70	1.69	2.62	113.34	66.72	109.18
Machinery (except electrical).....	41.4	38.7	41.3	2.82	1.94	2.78	116.72	74.83	114.71
Transportation equipment.....	42.3	38.0	42.1	2.93	1.91	2.87	124.02	72.71	120.86
Electrical products.....	41.8	39.1	40.9	2.62	1.86	2.37	109.25	72.69	96.85
Non-metallic mineral products.....	44.0	39.8	43.7	2.61	1.94	2.56	114.96	77.22	111.75
Petroleum and coal products.....	42.2	27.0	42.1	3.48	2.14	3.47	147.10	57.76	146.04
Chemicals and chemical products.....	41.5	38.7	41.0	2.83	1.74	2.64	117.32	67.12	108.24
Miscellaneous manufacturing industries.....	41.9	38.9	40.7	2.31	1.52	2.00	96.54	59.24	81.41
Totals, Manufacturing	41.8	37.9	40.9	2.66	1.63	2.44	111.25	61.59	99.91
Durable goods ¹	41.9	39.2	41.6	2.72	1.83	2.63	113.92	71.82	109.54
Non-durable goods ¹	41.6	37.5	40.2	2.59	1.56	2.26	107.82	58.69	90.88
Province									
Newfoundland.....	42.8	36.9	42.1	2.20	0.97	2.08	93.87	35.74	87.64
Nova Scotia.....	41.1	34.1	39.7	2.12	1.16	1.96	86.92	39.45	77.69
New Brunswick.....	43.2	35.8	41.8	2.22	1.19	2.05	96.02	42.42	85.71
Quebec.....	42.7	38.1	41.5	2.43	1.54	2.21	103.79	58.77	91.45
Ontario.....	41.8	38.4	41.0	2.80	1.71	2.57	117.13	65.79	105.55
Manitoba.....	41.1	37.1	40.0	2.44	1.46	2.20	100.18	54.26	87.93
Saskatchewan.....	40.5	38.2	40.2	2.58	1.65	2.47	104.31	62.95	99.48
Alberta.....	41.1	36.9	40.4	2.61	1.69	2.47	107.07	62.23	99.99
British Columbia.....	38.3	34.6	37.9	3.18	1.94	3.06	121.89	67.03	116.08
Selected Urban Area									
Montreal.....	42.5	37.9	41.0	2.53	1.63	2.26	107.65	61.75	92.83
Toronto.....	42.2	39.0	41.3	2.78	1.71	2.49	117.57	66.62	102.59
Hamilton.....	40.8	38.1	40.4	3.03	1.72	2.84	123.31	65.38	114.74
Windsor.....	42.5	38.5	41.8	3.09	2.26	2.96	131.46	87.15	123.80
Winnipeg.....	40.9	37.0	39.8	2.41	1.48	2.18	99.35	54.93	86.77
Vancouver.....	38.1	35.6	37.7	3.14	1.97	2.97	119.71	69.93	111.93

¹ The durable goods group includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

Other Salaried Classes in Manufacturing, Survey Week 1967

Note.—Survey week is the last week of October, based on the revised standard industrial classification.

Industry, Province and Urban Area	All Salaried Employees						Clerical and Related Workers						Other Salaried Employees					
	Average Weekly Hours			Average Weekly Earnings			Average Weekly Earnings			Average Weekly Earnings			Average Weekly Earnings			Average Weekly Earnings		
	Male	Female	No.	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Industry	No.	No.	No.	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Food and beverages.....	38.6	38.6	38.2	138.85	75.23	122.40	111.26	74.12	90.52	148.10	86.41	145.61	148.10	86.41	145.61	148.10	86.41	145.61
Tobacco processing and products.....	36.5	36.5	36.3	162.76	89.41	140.08	112.78	85.21	96.53	179.67	107.37	172.30	179.67	107.37	172.30	179.67	107.37	172.30
Rubber products.....	39.2	37.8	38.4	137.03	88.02	126.14	109.77	85.85	99.12	150.71	118.05	149.79	150.71	118.05	149.79	150.71	118.05	149.79
Leather products.....	39.3	36.9	38.4	129.77	93.82	108.46	111.17	66.44	85.10	139.79	92.85	136.54	139.79	92.85	136.54	139.79	92.85	136.54
Textile products.....	38.4	37.2	38.0	149.61	74.89	107.39	106.67	71.04	86.33	165.98	104.26	161.92	165.98	104.26	161.92	165.98	104.26	161.92
Knitting mills.....	39.5	37.5	38.5	139.56	67.98	108.10	106.67	66.04	77.53	150.70	76.71	138.53	150.70	76.71	138.53	150.70	76.71	138.53
Clothing.....	38.7	37.0	37.8	132.31	76.33	110.33	110.33	72.60	84.54	142.54	86.96	128.43	142.54	86.96	128.43	142.54	86.96	128.43
Wood products.....	40.7	37.6	40.1	150.66	76.75	136.11	118.07	75.51	99.08	163.50	92.95	161.82	163.50	92.95	161.82	163.50	92.95	161.82
Furniture and fixtures.....	40.0	37.3	39.2	144.17	72.74	121.17	111.57	70.42	89.18	163.41	105.04	160.60	163.41	105.04	160.60	163.41	105.04	160.60
Paper and allied industries.....	37.3	36.4	36.9	176.86	86.05	155.32	122.59	84.66	104.65	203.00	107.18	200.34	203.00	107.18	200.34	203.00	107.18	200.34
Printing, publishing and allied industries.....	36.3	35.5	36.0	147.63	77.98	120.89	110.26	72.80	86.67	163.71	101.72	155.18	163.71	101.72	155.18	163.71	101.72	155.18
Primary metal industries.....	38.7	37.6	38.5	175.22	86.09	158.94	124.95	84.12	107.60	194.80	110.84	191.20	194.80	110.84	191.20	194.80	110.84	191.20
Non-metallic mineral products.....	38.7	37.2	38.3	152.08	76.71	134.03	117.28	75.55	98.56	172.61	103.45	171.22	172.61	103.45	171.22	172.61	103.45	171.22
Machinery—except electrical.....	39.2	38.1	39.0	153.28	80.61	136.86	117.21	79.25	99.30	169.32	105.66	168.53	169.32	105.66	168.53	169.32	105.66	168.53
Transportation equipment.....	40.5	38.0	40.2	165.82	91.46	150.25	129.61	90.25	113.85	188.08	120.66	186.96	188.08	120.66	186.96	188.08	120.66	186.96
Electrical products.....	38.5	37.9	38.3	153.51	80.39	135.88	131.29	79.01	110.39	171.66	102.87	169.44	171.66	102.87	169.44	171.66	102.87	169.44
Non-metallic mineral products.....	38.6	36.7	38.2	140.08	77.02	133.54	112.80	75.93	95.91	161.41	88.43	161.91	161.41	88.43	161.91	161.41	88.43	161.91
Petroleum and coal products.....	36.0	35.7	35.9	197.54	91.37	170.76	129.88	87.86	108.81	227.03	124.75	222.63	227.03	124.75	222.63	227.03	124.75	222.63
Chemicals and chemical products.....	37.9	37.2	37.7	163.06	84.38	141.41	112.94	79.50	93.88	180.17	123.64	177.16	180.17	123.64	177.16	180.17	123.64	177.16
Miscellaneous manufacturing industries.....	39.0	37.7	38.6	154.39	77.55	130.75	117.50	75.73	92.49	168.27	97.82	164.91	168.27	97.82	164.91	168.27	97.82	164.91
Totals, Manufacturing	38.6	37.2	38.2	155.76	80.21	135.94	119.83	78.03	98.91	172.78	101.05	169.37	172.78	101.05	169.37	172.78	101.05	169.37
Durable goods ¹	39.2	37.9	38.9	157.89	81.60	140.81	124.26	80.32	105.30	176.84	104.83	175.18	176.84	104.83	175.18	176.84	104.83	175.18
Non-durable goods ¹	38.0	36.7	37.6	153.61	79.76	131.48	114.11	76.32	92.64	169.12	99.96	164.59	169.12	99.96	164.59	169.12	99.96	164.59
Province																		
Newfoundland.....	39.0	37.8	38.8	130.66	63.10	117.80	98.28	64.53	85.79	149.74	45.12	146.95	149.74	45.12	146.95	149.74	45.12	146.95
Nova Scotia.....	39.4	36.9	38.8	127.81	61.13	112.68	96.70	59.43	80.18	143.92	81.86	141.89	143.92	81.86	141.89	143.92	81.86	141.89
New Brunswick.....	39.8	35.5	38.8	134.02	64.75	117.73	99.96	63.31	83.45	150.39	74.11	146.01	150.39	74.11	146.01	150.39	74.11	146.01
Quebec.....	38.3	37.0	38.0	153.50	80.77	134.67	119.23	77.96	100.58	174.13	102.95	169.92	174.13	102.95	169.92	174.13	102.95	169.92
Ontario.....	38.7	37.2	38.3	159.72	81.88	138.54	122.91	79.82	100.04	175.62	103.39	172.39	175.62	103.39	172.39	175.62	103.39	172.39
Manitoba.....	38.4	37.5	38.1	133.71	66.74	115.96	103.59	65.89	84.59	147.45	75.58	144.27	147.45	75.58	144.27	147.45	75.58	144.27
Saskatchewan.....	38.8	38.3	38.7	133.14	72.51	117.45	102.87	71.19	85.92	144.72	86.16	151.63	144.72	86.16	151.63	144.72	86.16	151.63
Alberta.....	39.3	37.6	39.0	143.45	73.76	128.00	113.60	72.45	92.75	153.63	88.29	151.64	153.63	88.29	151.64	153.63	88.29	151.64
British Columbia.....	38.6	37.1	38.2	167.84	81.02	147.11	125.28	79.16	100.53	181.92	101.75	179.26	181.92	101.75	179.26	181.92	101.75	179.26
Selected Urban Area																		
Montreal.....	37.9	37.0	37.6	159.13	84.26	138.68	122.30	81.40	102.72	180.43	108.70	176.23	180.43	108.70	176.23	180.43	108.70	176.23
Toronto.....	38.1	36.7	37.7	162.52	84.23	138.66	122.64	81.43	98.60	178.65	108.98	174.55	178.65	108.98	174.55	178.65	108.98	174.55
Hamilton.....	39.2	38.2	38.9	166.50	86.32	145.76	133.27	85.60	111.67	187.69	99.87	185.22	187.69	99.87	185.22	187.69	99.87	185.22
Windsor.....	39.9	38.0	39.4	174.35	92.11	154.40	135.70	89.30	115.41	198.80	135.61	196.36	198.80	135.61	196.36	198.80	135.61	196.36
Winnipeg.....	38.1	37.3	37.9	133.43	66.94	115.52	103.21	66.14	84.93	147.86	75.50	144.64	147.86	75.50	144.64	147.86	75.50	144.64
Vancouver.....	38.3	36.9	37.9	164.91	80.98	142.45	120.74	79.34	97.76	181.29	100.77	178.32	181.29	100.77	178.32	181.29	100.77	178.32

¹ The durable group includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; the non-durable group includes all other manufacturing industries.

Subsection 3.—Estimates of Employment*

Estimates of employees by province and industry are produced by adding together data from the long-standing employment and earnings survey of larger establishments, from a sample survey of smaller establishments, and from special surveys in the non-commercial sector. These estimates are available from 1961 on a monthly basis.

The estimates of employees are more reliable indicators of changes in total employment than the large-establishment employment indexes released in the publication *Employment and Average Weekly Wages and Salaries*. However, the design of the sample survey does not permit the publication of extensive geographic and industrial detail and the large-establishment employment indexes are the only source of current information of this type.

* More detailed information is given in DBS monthly publication *Estimates of Employees by Province and Industry* (Catalogue No. 72-008).

19.—Estimates of Numbers of Employees, by Industrial Division, 1963-67, and by Month 1967

Year and Month	Forestry	Mines, Quarries and Oil Wells	Manufacturing			Construction	Transportation, Communication and Other Utilities
			Durables	Non-durables	Total		
	'000	'000	'000	'000	'000	'000	'000
Annual Average—							
1963.....	67.9	106.1	647.9	747.3	1,395.2	303.8	580.1
1964.....	70.7	107.4	689.6	774.3	1,464.0	320.7	597.7
1965.....	71.6	114.2	741.2	794.1	1,535.2	354.1	615.0
1966.....	72.3	116.7	792.4	826.2	1,618.5	377.2	633.8
1967.....	70.8	118.4	793.5	828.5	1,622.0	361.4	650.7
1967—							
January.....	69.5	114.6	793.2	809.5	1,602.7	325.2	620.4
February.....	65.3	114.9	794.3	808.6	1,602.8	312.6	619.1
March.....	54.5	116.5	792.4	811.2	1,603.6	310.6	622.3
April.....	48.2	113.3	793.7	811.1	1,604.8	334.4	635.9
May.....	63.5	118.1	794.1	827.3	1,621.4	367.8	657.8
June.....	80.1	122.3	797.0	848.5	1,645.5	390.0	676.1
July.....	82.9	124.1	791.5	847.7	1,639.1	406.3	680.1
August.....	84.8	123.8	805.1	863.4	1,668.5	410.3	678.8
September.....	82.9	119.9	799.2	849.7	1,648.9	403.6	668.5
October.....	79.3	118.2	790.4	836.4	1,626.8	394.5	659.7
November.....	74.2	118.8	796.1	829.5	1,625.6	373.0	657.6
December.....	64.1	116.1	775.3	799.6	1,574.9	308.2	632.5
	Trade	Finance, Insurance and Real Estate	Personal Services			Public Administration	Total, Specified Industries
			Commercial Sector	Non-commercial Sector	Total		
	'000	'000	'000	'000	'000	'000	'000
Annual Average—							
1963.....	790.2	215.8	415.9	589.5	1,005.4	201.4	4,666.0
1964.....	821.7	227.0	449.1	624.7	1,073.8	232.1	4,915.0
1965.....	864.3	235.3	493.0	661.8	1,154.8	237.2	5,181.7
1966.....	910.9	244.3	540.6	711.4	1,252.0	246.1	5,471.8
1967.....	934.6	260.0	577.1	773.1	1,350.3	267.2	5,635.4
1967—							
January.....	907.4	247.5	535.0	740.0	1,275.0	250.0	5,412.3
February.....	894.3	252.0	537.3	757.2	1,294.5	251.1	5,406.6
March.....	901.4	254.9	542.9	760.5	1,303.4	254.6	5,421.8
April.....	915.0	255.8	555.5	757.0	1,312.5	253.6	5,473.5
May.....	923.1	258.3	582.2	766.0	1,348.2	265.2	5,623.4
June.....	945.4	261.7	612.2	766.1	1,378.3	270.0	5,769.4
July.....	939.6	264.3	624.1	745.8	1,369.9	285.8	5,792.1
August.....	938.0	266.0	616.6	747.7	1,364.3	286.7	5,821.2
September.....	944.2	264.3	598.7	791.8	1,390.5	281.7	5,804.5
October.....	952.5	266.0	588.8	808.3	1,397.1	276.3	5,770.4
November.....	975.5	264.8	572.4	818.9	1,391.3	268.0	5,748.8
December.....	979.4	264.2	559.8	818.5	1,378.3	263.0	5,580.7

Subsection 4.—Estimates of Labour Income*

Wages and salaries, as shown in Table 20, include living allowances, bonuses, commissions and "tips" and are measured prior to deductions of all kinds (income tax, employees' contributions to the unemployment insurance fund and to welfare and pension funds, etc.). Both money payments and payments in kind (i.e., free board and lodging) made to or on behalf of residents of Canada, excluding military pay and allowances, are included in the total of wages and salaries. Retroactive wage payments are included in the month in which they are paid. Supplementary labour income comprises payments made by employers on behalf of their employees in order to provide them with future benefits, either definite or contingent. Specifically, these payments include employers' contributions to employee welfare and pension funds, to workmen's compensation and industrial vacation funds, and to the unemployment insurance fund.

* More detailed information is given in DBS monthly publication *Estimates of Labour Income* (Catalogue No. 72-005).

20.—Wages and Salaries, by Industry, and Supplementary Labour Income, 1963-67, and by Month 1967

NOTE.—Based on the unrevised standard industrial classification. Figures are unadjusted for seasonal variation. (Millions of dollars)

Year and Month	Agriculture, Fishing and Trapping	Forestry	Mining	Manufacturing	Construction	Transportation, Storage and Communication	Public Utilities
Annual Average—							
1963.....	235	308	572	6,045	1,419	2,008	397
1964.....	244	343	600	6,582	1,582	2,129	421
1965.....	252	378	678	7,262	1,962	2,316	455
1966.....	260	410	737	8,090	2,448	2,513	486
1967.....	264	431	813	8,581	2,546	2,815	562
1967—							
January.....	13.4	33.0	64.5	683.5	190.3	224.2	42.8
February.....	13.2	34.0	65.4	689.0	184.2	220.0	43.1
March.....	14.7	29.9	66.4	697.0	187.6	220.4	43.7
April.....	17.5	28.0	64.6	701.1	201.2	226.0	44.2
May.....	21.3	32.4	66.9	710.6	212.4	234.4	44.0
June.....	27.7	37.3	69.8	722.7	223.4	241.7	46.0
July.....	33.9	39.5	69.4	719.1	234.5	246.2	48.3
August.....	34.6	38.8	70.0	733.4	240.7	245.4	49.8
September.....	29.6	43.5	68.7	739.8	238.1	243.2	50.1
October.....	23.6	42.6	68.9	732.9	234.9	241.6	49.9
November.....	18.4	41.3	69.4	733.7	221.1	240.7	50.4
December.....	16.4	30.6	69.3	718.1	177.6	230.8	49.9
	Trade	Finance, Insurance and Real Estate	Service	Government, Non-military	Total Wages and Salaries	Supplementary Labour Income	Total Labour Income
Annual Average—							
1963.....	3,089	955	3,697	1,949	20,674	873	21,547
1964.....	3,358	1,046	4,137	2,065	22,507	926	23,433
1965.....	3,714	1,134	4,690	2,220	25,061	975	26,036
1966.....	4,125	1,230	5,340	2,486	28,125	1,203	29,328
1967.....	4,527	1,334	6,034	2,830	30,737	1,648	32,385
1967—							
January.....	354.6	107.2	470.3	213.5	2,397.3	119.2	2,516.5
February.....	354.6	107.9	477.8	213.6	2,402.8	135.2	2,538.0
March.....	360.3	108.6	490.0	218.9	2,437.5	137.5	2,575.0
April.....	366.8	109.3	497.9	222.5	2,479.1	140.8	2,619.9
May.....	373.3	110.1	509.4	231.1	2,545.9	139.0	2,684.9
June.....	382.5	110.8	520.7	243.3	2,625.9	144.8	2,770.7
July.....	379.2	111.5	476.6	251.0	2,609.2	145.9	2,755.1
August.....	377.9	112.2	484.0	253.7	2,640.5	144.9	2,785.4
September.....	385.8	112.9	526.6	250.8	2,689.1	139.7	2,828.8
October.....	388.6	113.7	527.9	244.6	2,669.2	140.5	2,809.7
November.....	398.3	114.4	526.5	243.7	2,657.9	134.5	2,792.4
December.....	404.8	115.1	526.6	243.6	2,582.8	126.0	2,708.8

Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the Canada Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics are based on an annual survey covering some 35,000 establishments in most industries and apply to the last normal pay period preceding Oct. 1. Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers for selected occupations are shown separately in the report but are combined in the calculation of industry index numbers shown in Table 21. Predominant ranges of rates for each occupation used are also given; overtime pay is excluded.

The index numbers of Table 21 measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. Information on concepts and methods of developing these statistics is given in the annual report.

21.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1961-67

(1961=100)

NOTE.—Figures for years prior to 1961 are not available on the 1961 base; indexes for 1956-65 on the 1949 base are given in the 1967 Year Book at p. 763 and indexes back to 1901 on the same base appear in the Department of Labour publication *Wage Rates, Salaries and Hours of Labour 1965*.

Year	Log-ging	Mining	Manufacturing			Con-struction	Trans-portion, etc.	Trade	Service	Local Gov-ernment	Gen-eral Index
			Dur-able Goods	Non-durable Goods	All Manu-factur-ing						
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	103.9	104.0	102.1	103.3	102.7	105.0	103.1	103.5	101.9	103.3	103.1
1963.....	110.1	107.0	105.1	106.7	106.0	109.1	106.0	107.9	106.6	107.4	107.0
1964.....	117.5	109.6	108.9	110.5	109.7	113.9	109.8	111.0	111.7	111.5	110.9
1965.....	126.4	113.3	114.4	115.5	115.0	119.8	114.3	116.9	118.4	118.1	116.5
1966.....	140.2	122.7	121.2	121.9	121.6	129.8	122.3	123.9	125.5	124.6	124.0
1967.....	156.0	130.2	130.0	131.0	130.5	142.0	132.8	132.5	133.9	136.9	133.4

22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1967

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sher-brooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Construction (building and structures only)—						
Bricklayer and mason.....	2.82	3.15	3.10	4.10	4.00	4.13
Bulldozer operator.....	—	1.94	2.80	3.35	3.65	3.65
Carpenter.....	2.80	2.95	2.90	3.89	3.90	3.93
Cement finisher.....	—	—	2.65	3.66	3.50	3.40
Crane operator.....	2.45	2.32	2.70	4.00	4.15	4.10
Electrician.....	3.08	3.00	3.00	4.25	4.40	4.45
Labourer.....	2.15	1.90	2.45	3.12	2.95	2.70
Marble and tile setter.....	2.82	—	3.00	4.10	3.72	3.45
Painter (brush).....	2.45	2.40	2.80	3.79	3.30	3.30
Plasterer.....	3.08	3.15	3.10	4.10	3.65	3.95
Plumber.....	3.25	2.75	3.00	4.25	4.37	4.50
Sheet metal worker.....	2.60	2.50	3.00	4.25	4.09	4.10

22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities Across Canada, Oct. 1, 1967—continued

Industry and Occupation	Halifax, N.S.	Saint John, N.B.	Sher- brooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Manufacturing and Other Industries—¹						
General labourer, male.....	1.88	1.80	1.91	2.06	2.20	2.28
Maintenance Trades—						
Carpenter.....	2.55	2.35	2.37	2.79	2.90	3.10
Electrician.....	2.74	2.68	2.66	3.01	3.14	3.33
Machinist.....	2.68	2.58	2.35	2.91	2.99	3.37
Mechanic.....	2.42	2.33	2.35	2.90	2.95	3.18
Millwright.....	—	2.84	2.68	2.90	3.09	3.01
Pipefitter.....	2.97	2.68	2.78	3.10	3.23	3.23
Tool and die maker.....	2.84	—	2.36	3.01	3.23	3.17
Welder.....	2.64	2.52	2.56	2.73	2.77	3.08
Service Occupations—						
Truck driver, light and heavy.....	1.93	1.93	1.96	2.30	2.49	2.55
Trucker, power.....	1.89	2.28	1.93	2.45	2.50	2.67
	per wk.	per wk.	per wk.	per wk.	per wk.	per wk.
Office Occupations, Male—						
Bookkeeper, senior.....	109	111	109	127	126	125
Clerk, intermediate.....	80	85	78	90	92	99
Clerk, senior.....	103	107	108	120	119	130
Clerk, order.....	82	83	91	98	104	109
Draughtsman, intermediate.....	95	111	111	117	119	113
Draughtsman, senior.....	125	145	139	148	148	142
Office Occupations, Female—						
Clerk, intermediate.....	64	68	64	76	79	76
Machine Operator—						
Bookkeeping.....	61	59	59	69	73	70
Calculating.....	63	63	62	73	76	70
Payroll clerk.....	66	68	63	80	82	74
Secretary, senior.....	84	85	79	97	97	93
Stenographer, junior.....	64	65	64	73	72	71
Stenographer, senior.....	74	73	76	86	83	85
Switchboard operator and receptionist.....	61	57	65	72	74	70
Typist, junior.....	55	51	55	62	65	65
Typist, senior.....	65	61	63	74	76	72
	Winnipeg, Man.	Regina, Sask.	Saska- toon, Sask.	Calgary, Alta.	Edmon- ton, Alta.	Van- couver, B.C.
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Construction (building and structures only)—						
Bricklayer and mason.....	3.50	3.30	3.30	3.50	3.50	4.00
Bulldozer operator.....	2.65	2.12	2.12	2.80	2.80	3.96
Carpenter.....	3.35	3.05	3.00	3.45	3.40	4.14
Cement finisher.....	2.70	2.28	2.43	2.75	3.00	3.65
Crane operator.....	3.00	2.22	2.22	3.25	3.25	4.17
Electrician.....	3.70	3.30	3.50	3.55	3.50	4.75
Labourer.....	2.40	2.13	2.13	2.40	2.40	3.24
Marble and tile setter.....	3.10	—	3.10	3.35	3.45	4.08
Painter (brush).....	3.05	2.75	2.75	2.95	2.75	3.76
Plasterer.....	3.40	3.30	3.25	3.25	3.55	4.15
Plumber.....	3.57	3.55	3.65	3.65	3.70	3.99
Sheet metal worker.....	3.05	3.40	3.15	3.20	3.65	3.64
Manufacturing and Other Industries—¹						
General labourer, male.....	2.02	1.91	2.11	2.17	2.10	2.58
Maintenance Trades—						
Carpenter.....	2.85	2.57	2.63	2.98	2.87	3.25
Electrician.....	2.83	3.04	2.95	3.32	3.29	3.46
Machinist.....	2.91	3.17	3.01	3.16	3.18	3.28
Mechanic.....	2.85	2.80	2.77	2.91	2.90	3.33
Millwright.....	3.01	3.18	2.84	3.00	3.18	3.56
Pipefitter.....	2.98	3.30	3.03	3.26	3.26	3.34
Tool and die maker.....	2.71	—	—	3.01	3.28	3.35
Welder.....	2.88	3.02	2.66	3.03	2.95	3.32
Service Occupations—						
Truck driver, light and heavy.....	2.02	2.09	2.16	2.25	2.20	2.88
Trucker, power.....	2.26	2.49	2.11	2.35	2.55	2.94

¹ "Other Industries" consists of logging; mining; transportation (all sectors including air transportation), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

**22.—Average Wage and Salary Rates for Selected Occupations in Certain Cities
Across Canada, Oct. 1, 1967—concluded**

Industry and Occupation	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, B.C.
	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.
Office Occupations, Male—						
Bookkeeper, senior.....	108	114	130	129	122	130
Clerk, intermediate.....	84	81	87	97	87	92
Clerk, senior.....	110	108	108	123	117	126
Clerk, order.....	89	89	88	96	100	107
Draughtsman, intermediate.....	112	99	101	113	106	120
Draughtsman, senior.....	139	126	126	141	132	148
Office Occupations, Female—						
Clerk, intermediate.....	68	68	72	76	71	79
Machine Operator—						
Bookkeeping.....	66	66	65	65	66	70
Calculating.....	69	72	68	70	72	75
Payroll clerk.....	71	82	76	79	74	80
Secretary, senior.....	89	89	85	97	87	94
Stenographer, junior.....	65	69	64	69	66	71
Stenographer, senior.....	77	75	77	81	76	81
Switchboard operator and receptionist.....	61	63	63	67	66	71
Typist, junior.....	57	59	58	61	58	62
Typist, senior.....	67	72	67	73	68	73

Table 23 gives summary data on working conditions of plant and office employees in manufacturing industries and all industries for the years 1965-67. The percentages in this table denote the proportions that employees—plant or office—of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items. Further details and additional information are given in the annual report *Working Conditions in Canadian Industry*, compiled and published by the Canada Department of Labour and based on a survey at May 1 each year of some 35,000 reporting units.

**23.—Summary of Selected Working Conditions of Non-office and Office Employees
in Manufacturing and All Industries, 1965-67**

Item	1965		1966		1967	
	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries
COVERAGE						
Non-office Employees—						
Reporting establishments... No.	8,993	20,592	8,332	19,253	9,227	21,410
Employees..... “	922,557	1,976,551	960,575	1,989,593	996,705	2,257,042
Office Employees—						
Reporting establishments.. No.	8,040	18,949	7,985	19,396	9,257	22,556
Employees..... “	290,343	952,434	292,540	980,710	346,136	1,107,209
PERCENTAGES OF NON-OFFICE EMPLOYEES						
Standard Weekly Hours—						
40 and under.....	77	76	77	79	80	79
Over 40 and under 44.....	7	4	6	4	6	4
44.....	2	4	3	4	2	3
45.....	7	5	9	4	6	5
Over 45 and under 48.....	1	1	1	1	1	1
48.....	3	5	2	4	2	4
Over 48.....	3	3	2	2	2	3

23.—Summary of Selected Working Conditions of Non-office and Office Employees
in Manufacturing and All Industries, 1965-67—concluded

Item	1965		1966		1967	
	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries	Manu- facturing Industries	All Industries
PERCENTAGES OF NON-OFFICE EMPLOYEES—concluded						
Employees on a five-day week.....	92	86	93	87	93	87
Vacations with Pay—						
Two weeks.....	89	82	88	84	95	91
After: 1 year or less.....	80	88	87	81	44	60
2 years.....	11	17	11	11	12	10
3 years.....	29	16	25	14	27	16
4-5 years.....	19	11	15	8	8	5
Other periods.....	1	—	—	—	8	1
Three weeks.....	77	77	78	80	80	81
After: Less than 10 years.....	15	27	23	33	26	38
10 years.....	25	20	28	23	31	21
11-14 years.....	12	7	11	6	9	10
15 years.....	22	21	15	16	12	10
20 years.....	2	1	1	1	2	1
Other periods.....	1	1	—	—	—	—
Four weeks.....	47	52	52	58	57	60
After: Less than 25 years.....	26	28	38	41	40	40
25 years.....	19	22	14	17	13	16
More than 25 years.....	2	2	—	—	—	—
Paid Statutory Holidays.....	96	94	97	95	97	96
1-5.....	4	4	3	3	3	4
6.....	4	4	3	3	4	3
7.....	9	11	8	6	7	5
8.....	51	55	48	39	42	55
9.....	20	21	25	23	29	23
More than 9.....	8	19	12	21	13	25
PERCENTAGES OF OFFICE EMPLOYEES						
Standard Weekly Hours—						
Under 37½.....	30	33	32	39	29	34
37½.....	42	37	43	38	43	40
Over 37½ and under 40.....	7	4	5	3	5	2
40.....	19	24	18	23	21	22
Over 40.....	2	2	2	2	2	2
Employees on a five-day week.....	97	97	98	98	98	97
Vacations with Pay—						
Two weeks.....	93	77	94	80	98	86
After: 1 year or less.....	85	72	88	76	91	82
2 years.....	5	3	5	3	5	3
3 years.....	2	1	2	1	2	1
5 years.....	1	1	1	—	1	—
Other periods.....	—	—	—	—	—	—
Three weeks.....	87	90	89	92	90	92
After: Less than 10 years.....	22	46	30	52	34	55
10 years.....	33	22	38	25	40	23
11-14 years.....	13	5	10	4	7	7
15 years.....	17	15	12	10	8	6
20 years.....	1	1	1	1	1	1
Other periods.....	1	1	—	—	—	—
Four weeks.....	60	70	65	75	69	76
After: Less than 25 years.....	34	37	50	51	50	51
25 years.....	23	30	15	23	13	20
More than 25 years.....	3	3	—	1	—	—
Paid Statutory Holidays.....	99	99	100	100	100	100
1-6.....	3	2	2	2	2	2
7.....	4	7	4	3	3	2
8.....	56	51	51	32	41	30
9.....	26	20	29	23	39	26
More than 9.....	10	39	14	40	15	39

Wages of Farm Labour.—The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland. The rates presented in Table 24 are average wages paid to all farm help regardless of age and skill. Because the rates reported may cover a wide range of skills, of types of work and of ages of hired workers, the value of the resulting data is considered to be an indicator of trends rather than a measure of absolute wage levels. No attempt has been made to have the wage rates reflect such perquisites as separate housing accommodation, fuel, electricity and food which, under some conditions of hiring, are supplied by employers to their hired farm help.

24.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1966-68

NOTE.—Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Province and Year	Jan. 15				May 15				Aug. 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Maritime Provinces—												
1966.....	6.00	7.60 ^r	128.00 ^r	165.00	6.60	7.80	129.00	178.00	6.20	8.00	129.00	167.00
1967.....	6.30	8.30 ^r	144.00	196.00	6.80	8.70	148.00	197.00	7.10	8.80	149.00	185.00
1968.....	7.00	9.00	150.00	201.00	7.40	9.20	160.00	205.00	7.60	9.50	164.00	211.00
Quebec—												
1966.....	7.00	8.90	135.00	181.00	7.20	8.80	144.00	186.00	7.50	9.80	138.00	191.00
1967.....	7.40	9.50	145.00	198.00	7.70	9.50	155.00	199.00	7.80	10.30	155.00	213.00
1968.....	8.00	9.90	155.00	210.00	8.10	10.10	165.00	221.00	8.30	10.50	170.00	225.00
Ontario—												
1966.....	7.60	9.70	170.00	218.00	8.10	9.90	182.00	236.00	8.40	10.80	171.00	239.00
1967.....	8.10	10.20	183.00	249.00	8.50	10.80	203.00	252.00	9.10	11.30	185.00	256.00
1968.....	8.80	10.90	191.00	262.00	9.40	11.70	220.00	282.00	10.30	12.50	233.00	289.00
Manitoba—												
1966.....	7.30	9.20	138.00	185.00	8.20	10.20	176.00	218.00	8.40	10.60	182.00	232.00
1967.....	7.90	10.00	165.00	213.00	8.60	10.70	194.00	248.00	9.10	11.60 ^r	204.00	244.00
1968.....	8.40	10.70	176.00	238.00	9.60	11.80	216.00	264.00	9.50	11.80	211.00	263.00
Saskatchewan—												
1966.....	7.60	9.70	144.00	188.00	9.00	11.20	200.00	238.00	9.50	11.30	199.00	243.00
1967.....	8.10	10.40	171.00	216.00	9.90	12.00	220.00	261.00	10.30	12.30 ^r	222.00	274.00
1968.....	8.70	11.00	177.00	239.00	10.20	12.30	232.00	282.00	10.50	12.50	238.00	285.00
Alberta—												
1966.....	7.80	9.90	160.00	211.00	9.00	11.20	190.00	243.00	9.00	11.30	189.00	241.00
1967.....	8.20	10.40	175.00	230.00	9.20	11.90	210.00	266.00	9.80	12.10	209.00	263.00
1968.....	8.70	10.90	187.00	254.00	10.00	12.20	230.00	276.00	10.40	12.80	234.00	291.00
British Columbia—												
1966.....	8.80	10.80	172.00	249.00	9.80	11.50	195.00	275.00	9.00	11.60	195.00	267.00
1967.....	9.30	11.60	200.00	284.00	9.90	12.10	208.00	293.00	9.60	11.90	205.00	293.00
1968.....	9.60	12.10	206.00	300.00	10.20	12.40	240.00	296.00	10.10	12.20	248.00	300.00
Totals—												
1966.....	7.10 ^r	9.00	151.00 ^r	200.00 ^r	7.80	9.50	176.00	225.00	8.20	10.40	176.00	230.00
1967.....	7.30	9.50	167.00 ^r	225.00 ^r	8.30	10.50	197.00	251.00	8.60	10.90	194.00	251.00
1968.....	8.20	10.20	181.00	247.00	9.30	11.30	220.00	268.00	9.60	11.60	224.00	271.00

Section 5.—Pension Plans*

Very few pension plans in Canada have been in existence for more than 25 years and most of the older plans were established by governments, banks and railways. The greatest growth in pension plans and coverage began during World War II and continued through the postwar years. By 1960 there were 9,000 pension plans in Canada covering some 1,800,000 persons and over the next seven years the number increased by over 75 p.c. to an estimated 16,000 plans in 1937 covering some 2,700,000 persons.

Up to 1948 most plans were of the insured type, being underwritten by either an insurance company or the Government Annuities Branch of the Canada Department of Labour. The trust fund arrangement then began to grow in popularity and is now the dominant instrument for funding pension benefits measured in terms of membership and assets held. In 1967 contributions to trustee pension funds alone amounted to \$748,000,000, accounting for over 75 p.c. of all contributions to private pension plans excluding government plans having no invested assets. Funds of this magnitude represent a major medium for personal savings and the investment of these funds exerts a considerable influence on the capital market.

Table 25 shows the distribution of pension business for the years 1963-67, excluding the public service superannuation funds of the Federal Government and of six provincial governments which are nominal funds only, having no invested assets.

Most trustee pension plans use the facilities of corporate trustees (trust companies) who invest the contributions, accumulate the earnings and pay benefits to the plan members. Trustee pension plan funds are also managed by individual trustees or pension fund societies. The designated trustee, corporate or individual, must invest the contributions in accordance with the trust agreement which sets forth the rights and duties of the trustee. Many of the small funds invest in the "pooled funds" of trust companies which combine the assets of many pension funds, thus providing the diversification of investments usually available only to larger funds.

* Prepared by the Pension Plans Section, Labour Division, Dominion Bureau of Statistics.

25.—Distribution of Pension Business between Trustee Funds, Life Insurance Company Annuities and Government Annuities, 1963-67

Item and Year	Trustee Pension Funds	Life Insurance Group Annuities ¹	Federal Government Group Annuities
	No.	No.	No.
Funds—			
1963.....	1,804	9,276	1,365
1964.....	2,118	10,048	1,312
1965.....	2,997	10,866	1,267
1966.....	3,467	11,459	1,416
1967.....	3,789	11,718	1,398
Plan Members—			
1963.....	1,253,437	560,539	155,586
1964.....	1,332,391	570,925	149,026
1965.....	1,467,424	580,984	141,579
1966.....	1,554,891	563,579	122,576
1967.....	1,603,079	598,427	116,892
Contributions—	\$'000,000	\$'000,000	\$'000,000
1963.....	537	178	13
1964.....	593	207	10
1965.....	674	217	7
1966.....	692	174	5
1967.....	748	177	4
Assets (book value)—			
1963.....	5,127	1,818	623
1964.....	5,766	2,049	615
1965.....	6,541	2,333	634
1966.....	7,250	2,491 ^r	644
1967.....	8,068	2,668	636

¹ Excludes segregated pension plan funds, with assets of \$194,000,000 in 1967.

26.—Trusteed Pension Funds, Income, Expenditures and Assets, 1961-67

Item	1961	1962	1963	1964	1965*	1966*	1967
	No.	No.	No.	No.	No.	No.	No.
Trust Arrangements—							
(a) Corporate trustees.....	1,109	1,256	1,487	1,732	2,306	2,530	2,737
(b) Individual trustees.....	210	229	250	320	625	862	975
(c) Combinations of (a) and (b).....	7	23	29	29	32	42	46
(d) Pension fund societies.....	36	38	38	37	34	33	31
Totals, Trusteed Funds.....	1,362	1,546	1,804	2,118	2,997	3,467	3,789
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Income—							
Total contributions.....	432	468	537	593	674	692	748
Employer.....	251	268	314	345	403	431	474
Employee.....	181	200	223	248	271	261	274
Investment income.....	179	204	235	270	306	348	386
Net profit on sale of securities.....	4	6	9	9	11	7	19
Other.....	4	3	5	3	7	19	9
Totals, Income.....	619	681	786	875	998	1,066	1,162
Expenditures—							
Pension payments out of funds.....	124	134	149	169	197	227	257
Cost of pension purchased.....	4	6	4	8	8	11	11
Cash withdrawals.....	33	42	47	54	84	106	82
Administration costs.....	2	2	3	4	5	6	7
Net loss on sale of securities.....	12	6	3	4	2	7	6
Other expenditures.....	2	2	3	8	7	16	6
Totals, Expenditures.....	177	192	209	247	303	373	369
Assets (book value)—							
Investment in pooled funds.....	125	173	239	324	428	513	610
Investment in mutual funds.....	35	44	49	58	32	36	40
Bonds.....	3,010	3,257	3,580	3,865	4,182	4,487	4,761
Bonds of or guaranteed by Government of Canada.....	600	607	581	549	511	488	479
Bonds of or guaranteed by provincial governments.....	1,805	1,476	1,687	1,861	2,014	2,218	2,368
Bonds of Canadian municipal governments, school boards, etc.....	435	461	539	585	647	682	697
Other Canadian.....	661	710	790	867	1,006	1,090	1,207
Non-Canadian.....	9	3	3	3	4	9	10
Stocks.....	391	497	611	776	989	1,217	1,514
Canadian, common.....	322	402	496	624	791	923	1,125
Canadian, preferred.....	18	18	20	19	29	49	56
Non-Canadian, common.....	51	77	95	133	169	234	330
Non-Canadian, preferred.....	--	--	--	--	--	1	3
Mortgages.....	341	414	479	542	623	676	724
Insured residential (NHA).....	231	278	324	350	371	376	366
Conventional.....	110	136	155	192	252	300	358
Real estate and lease-backs.....	33	34	40	42	44	41	49
Miscellaneous—							
Cash on hand and in chartered banks.....	42	44	58	75	103	118	85
Guaranteed investment certificates.....	--	--	--	--	18	27	44
Short-term investments.....	--	--	--	--	32	33	56
Accrued interest and dividends receivable.....	36	42	44	49	56	64	68
Accounts receivable.....	21	24	27	31	32	37	115
Other assets.....	2	1	--	4	2	1	2
Totals, Assets.....	4,036	4,530	5,127	5,766	6,541	7,250	8,068

Federal Government Annuities.—Since 1908 the Federal Government has sold annuities and industrial pension plans under the Government Annuities Act (RSC 1952, c. 132). The purpose of the introduction of this legislation was to encourage people to save for old age but since the need for government service in this form has decreased in recent years, reduction of the program became justified and the employment of salesmen to solicit business was ended on Nov. 30, 1967. Annuities are still available under the Act to those who ask for them. At Mar. 31, 1968 there were 101,987 annuities being paid amounting to \$59,042,042 annually. There were 1,398 pension plans in force providing portable pensions to 181,864 employees, and there were 81,067 individual deferred annuities being purchased. The amount in the Government Annuities Account was \$1,326,098,138.

Section 6.—Unemployment Insurance*

During the depression of the 1930s the need for a nation-wide unemployment insurance program became recognized. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, by consent of the provinces, an amendment to the British North America Act was obtained empowering the Federal Parliament to legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance program at the national level and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations. The Act came into effect on July 1, 1941; amended on several occasions, it was replaced by a new Unemployment Insurance Act, effective Oct. 2, 1955.† On Apr. 1, 1965, the operation of the National Employment Service was transferred to the Department of Labour and on Jan. 1, 1966 to the Department of Manpower and Immigration (see pp. 752-753).

Legislation provides for a compulsory insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the payment of benefit to eligible unemployed persons. The Act is administered by a Commission of three persons appointed by the Governor in Council, of whom one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service‡ except: the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; hunting and trapping; private domestic service; private-duty nursing; teaching; workers on other than an hourly, daily or piece rate earning more than \$7,800 a year effective June 30, 1968, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a mileage rate) are insured regardless of amount of earnings.

The amount of the employee contribution is determined by the employee's weekly earnings; an equal contribution is required from the employer. The Federal Government contributes one fifth of the aggregate employer-employee contribution and defrays administrative expenses. Contributions became payable on July 1, 1941. Benefit became payable on Jan. 27, 1942 and by Mar. 31, 1968 a total of \$5,803,000,000 had been paid.

The following statement shows the current weekly rates of contribution and benefit effective June 30, 1968. The weekly contribution is based on actual earnings in the week, irrespective of the number of days worked. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. In order to qualify for regular benefit, a claimant must have at least 30 weekly contributions in the last 104 weeks prior to claim, eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period, and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

* Prepared by the Unemployment Insurance and Manpower Section, Labour Division, Dominion Bureau of Statistics, statistics of unemployment insurance are compiled and published by the DBS from material supplied by the Unemployment Insurance Commission.

† Copies of the 1955 Act incorporating subsequent amendments are available from the Queen's Printer, Ottawa (Catalogue No. YX92-222/50).

‡ Commencing Apr. 1, 1957, coverage was extended to persons engaged in fishing, notwithstanding the fact that such persons are not employees of any other person but are usually self-employed; commencing Apr. 1, 1967, coverage was extended to employees engaged in agriculture and horticulture.

WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, IN EFFECT FROM JUNE 30, 1968

NOTE.—Weekly rates in effect from Oct. 2, 1955 to June 30, 1968 are given in the 1962 Year Book, p. 738 and the 1967 edition, p. 769.

Range of Weekly Earnings	Weekly Employee Contribution	Range of Average Weekly Contributions	Weekly Rates of Benefit		Earnings not Deducted	
			Person Without Dependant	Person With Dependant	Person Without Dependant	Person With Dependant
	cts.	cts.	\$	\$	\$	\$
Less than \$20.....	10 ¹	Less than 28.....	13	17	7	9
\$20 and under \$ 30.....	20	28 and under 43..	16	21	8	11
30 " " 40.....	35	43 " " 58..	19	25	10	13
40 " " 50.....	50	58 " " 73..	22	29	11	15
50 " " 60.....	65	73 " " 88..	26	33	13	17
60 " " 70.....	80	88 " " \$1.03..	30	38	15	19
70 " " 80.....	95	\$1.03 " " \$1.18..	34	43	17	22
80 " " 90.....	\$1.10	\$1.18 " " \$1.33..	38	48	19	24
90 " " 100.....	\$1.25	\$1.33 or over.....	42	53	21	27
100 or over.....	\$1.40					

¹ A half stamp.

The Act contains a special provision whereby the regular contribution requirements are relaxed somewhat during a 5½-month period commencing with the first week of December each year. Under this provision, claimants unable to fulfil the contribution requirements for regular benefit may draw "seasonal benefit" if they have at least 15 contribution weeks during the fiscal year, or, failing this, if they terminated regular benefit since the previous mid-May.

Statistics on the Operation of the Act.—In order to assess the impact of changing economic conditions on the insurance program, provision is made for collection of current operational data, such as claims filed and processed and payments made. This information is published monthly in the *Statistical Report on the Operation of the Unemployment Insurance Act* (Catalogue No. 73-001). Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program.

Persons wishing to draw benefit must file either an initial or a renewal claim. Where it is necessary to compute entitlement to benefit, an initial claim is taken, otherwise a renewal. In the main, initial and renewal claims combined are an approximation of recorded separations from employment during a month. However, if a claimant exhausts his benefit and wishes to be reconsidered for further benefit, an initial claim is required. Such claims, accounting for approximately 15 p.c. of the monthly volume in 1967, are not new cases of unemployment. The count of claimants at the month-end indicates the extent to which claimants maintain contact with local offices of the Commission.

27.—Amount Paid, 1956-67, and Claims Filed, Claimants and Amount Paid, by Month, 1967

Year	Amount Paid	Month	Initial and Renewal Claims Filed	Claimants at Month-End	Amount Paid
	\$'000	1967	'000	'000	\$'000
1956.....	210,330	January.....	254	532	41,383
1957.....	305,076	February.....	170	552	43,531
1958.....	492,901	March.....	182	544	53,167
1959.....	406,097	April.....	148	492	47,212
1960.....	481,836	May.....	117	281	37,192
		June.....	89	243	17,837
1961.....	493,971	July.....	102	246	17,743
1962.....	409,208	August.....	93	227	16,849
1963.....	394,163	September.....	83	211	15,772
1964.....	344,390	October.....	115	242	15,494
1965.....	312,110	November.....	194	337	19,886
		December.....	271	502	26,581
1966.....	295,301				
1967.....	352,645	Totals, 1967.....	1,817	367¹	352,645

¹ Month-end average.

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are compiled regarding persons employed in insurable employment and benefit periods established and terminated. These data are published in the annual report *Benefit Periods Established and Terminated under the Unemployment Insurance Act* (Catalogue No. 73-201). Data on persons insured under the Act are obtained from a 10-p.c. sample of insurance books and contribution cards renewed at June 1 each year. Included are persons engaged in insurable employment as well as persons on claim at that date.

28.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1966 and 1967

NOTE.—Based on a 10-p.c. sample of contributors and claimants at June 1.

Industry	1966		1967	
	Males	Females	Males	Females
	No.	No.	No.	No.
Agriculture.....	11,000	2,050	20,540	3,710
Forestry (mainly logging).....	78,920	1,970	77,000	1,840
Fishing and trapping.....	25,490	260	23,210	310
Mines (including milling), quarries and oil wells.....	97,940	4,860	111,250	5,170
Manufacturing.....	1,202,710	426,090	1,250,730	453,440
Construction.....	366,300	11,140	372,450	12,490
Transportation, communication and other utilities....	397,970	76,580	434,510	85,230
Trade.....	487,780	343,040	496,220	373,580
Finance, insurance and real estate.....	69,750	136,830	64,010	150,250
Community, business and personal service.....	242,010	306,530	258,260	338,960
Public administration and defence.....	124,010	37,150	128,680	43,290
Industry unspecified or undefined.....	27,090	9,910	18,520	11,120
Totals, All Industries.....	3,130,970	1,356,410	3,255,380	1,479,390

Benefit.—The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks. However, contributions more than one year old cannot be used if they have already been taken into account in computing previous rights. Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves employment voluntarily without just cause or refuses suitable employment.*

Table 29 distributes regular benefit periods terminated by province and shows average weeks and average dollar benefit paid on these terminations. A claimant establishes a *regular benefit period* when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit and the weekly rate authorized, comprising total entitlement, are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates either when he has exhausted the amount authorized or when 52 weeks† have elapsed since he established, whichever comes first.

* This list should not be considered exhaustive; more detail may be obtained from the Unemployment Insurance Act and Regulations.

† Under the Training Allowances Act, 1966, the benefit period of an insured person may be extended if he (or she) is in receipt of a training allowance. The benefit period is extended by the amount of time the person is undergoing training, but in no event can the benefit period extend beyond 156 weeks.

29. —Regular Benefit Periods Terminated, Duration and Average Amount of Benefit Paid, by Province, 1966 and 1967

NOTE.—Based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used.

Province	1966			1967		
	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	\$	No.	No.	\$
Newfoundland.....	21,810	14.1	374	24,980	15.1	421
Prince Edward Island.....	4,165	13.6	325	4,160	14.1	349
Nova Scotia.....	35,725	11.8	289	33,535	13.5	340
New Brunswick.....	31,480	13.1	328	32,135	13.5	347
Quebec.....	243,550	11.6	304	244,060	12.4	329
Ontario.....	243,640	10.6	272	264,300	11.3	295
Manitoba.....	28,535	11.9	304	25,695	12.5	323
Saskatchewan.....	19,605	12.4	314	19,270	12.1	314
Alberta.....	37,910	10.2	266	37,125	10.4	273
British Columbia.....	82,530	10.6	281	99,480	11.2	303
Totals.....	748,950	11.3	292	784,740	12.0	315

Table 30 gives regular benefit periods terminated and average weeks paid, classified by age group of claimant.

30.—Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age Group of Claimant, 1966 and 1967

NOTE.—Based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used.

Age Group	1966		1967	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
	No.	No.	No.	No.
Under 20 years.....	34,825	9.4	34,165	9.9
20 — 24 “.....	139,160	9.6	145,345	10.2
25 — 34 “.....	178,050	9.7	185,900	10.7
35 — 44 “.....	148,555	10.1	153,560	10.9
45 — 54 “.....	116,475	11.3	120,485	12.0
55 — 64 “.....	79,625	13.7	84,830	14.3
65 years or over.....	38,325	25.2	40,990	24.8
Unspecified.....	13,935	12.1	19,465	12.0
Totals.....	748,950	11.3	784,740	12.0

Table 31 gives provincial distributions of seasonal benefit periods in 1966 and 1967, average weeks and average benefit paid.

31.—Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1966 and 1967

NOTE.—Based on a 20-p.c. sample, except for Quebec and Ontario where a 10-p.c. sample was used.

Province	1966			1967		
	Benefit Periods	Average Weeks Paid	Average Amount Paid	Benefit Periods	Average Weeks Paid	Average Amount Paid
	No.	No.	\$	No.	No.	\$
Newfoundland.....	25,425	12.6	309	22,865	12.8	331
Prince Edward Island.....	4,615	12.6	307	4,805	12.4	314
Nova Scotia.....	18,875	10.9	268	19,155	11.3	282
New Brunswick.....	22,335	11.1	267	21,085	11.4	285
Quebec.....	74,670	9.0	226	68,270	8.9	229
Ontario.....	57,230	8.8	211	62,350	9.3	229
Manitoba.....	9,815	9.1	233	8,325	9.3	240
Saskatchewan.....	7,885	8.9	218	7,170	9.0	226
Alberta.....	9,260	8.0	201	8,310	8.2	212
British Columbia.....	25,355	9.1	242	27,440	9.6	263
Totals.....	255,465	9.7	240	249,775	9.9	252

Section 7.—Employment Injuries and Workmen's Compensation

Fatal Employment Injuries.—Data on fatal employment injuries, compiled by the Canada Department of Labour, are obtained from provincial Workmen's Compensation Boards, from the Canadian Transport Commission and other government authorities, and from press reports. Of the 1,150 fatal injuries to industrial workers that occurred during 1967, 291 were the result of collisions, derailments and wrecks—166 involving trucks or automobiles. There were 248 deaths caused by victims being struck by different objects, and 204 deaths were the result of falls and slips—51 of these into rivers, lakes, seas or harbours. The classification of "caught in on or between objects, vehicles, etc." accounted for 98 deaths, and inhalations, contact, absorptions, ingestions and industrial diseases accounted for another 91. There were 82 deaths caused by conflagrations, temperature extremes and explosions, 46 by over-exertion, 45 by contact with electric current, and one by striking against or stepping on an object. The remaining 44 were the result of various miscellaneous accidents.

32.—Fatal Employment Injuries, by Industry, 1964-67

Industry	Numbers				Percentages of Total			
	1964	1965	1966	1967	1964	1965	1966	1967
Agriculture.....	72	50	55	31	5.4	3.8	4.4	2.7
Forestry.....	155	108	110	105	11.7	8.1	8.9	9.1
Fishing and trapping.....	37	40	37	33	2.8	3.0	3.0	2.9
Mining, quarrying and oil wells.....	161	176	144	179	12.2	13.3	11.6	15.6
Manufacturing.....	235	225	220	186	17.8	16.9	17.7	16.2
Construction.....	252	277	293	222	19.1	21.0	23.6	19.3
Transportation, communication and other utilities.....	237	288	251	236	18.0	21.7	20.2	20.5
Trade.....	62	69	59	64	4.7	5.2	4.8	5.6
Finance, insurance and real estate.....	2	3	1	5	0.2	0.2	—	0.4
Service.....	55	38	43	54	4.2	2.9	3.5	4.7
Public administration.....	52	52	29	35	3.9	3.9	2.3	3.0
Totals.....	1,320	1,326	1,242	1,150	100.0	100.0	100.0	100.0

Workmen's Compensation.*—In all provinces legislation is in force providing for payment of compensation to workmen who are injured by accident arising out of and in the course of their employment or who are disabled as a result of a specified industrial disease. To be entitled to benefits, a workman must be employed in an industry covered by the Act at the time of the injury. Compensation is not payable, however, where the disability lasts less than a stated number of days (varying from one to four in the provincial Acts), or if the injury is due to the workman's own misconduct. A workman who is entitled to compensation has no right of action against his employer for injury sustained during employment.

The Acts provide for a compulsory system of collective liability on the part of employers. Industries covered are divided into classes or groups, according to hazard. Employers are required to contribute to the Accident Fund at a rate fixed in accordance with the accident experience of the class or group. Each class is liable for the costs of all accidents occurring in that class.

* See also pp. 760-761.

The laws apply to enumerated employments but the range of industries covered by each Act is very wide. The principal exceptions are farm workers (who are not covered except in Ontario), domestic servants, casual workers, employees of financial, insurance and professional undertakings, employees of non-profit religious or charitable organizations, and workers in certain service industries in most provinces, for example, barber shops and beauty parlours. Small undertakings, i.e., those with fewer than a specified number of employees, are exempted from the Act in some provinces. Excluded employments may generally be brought under the Act on the voluntary application of the employer.

Benefits for disability are based on 75 p.c. of earnings, subject to an annual ceiling. Where disability is permanent, a life pension is paid, irrespective of future earnings. Medical benefits are provided without limitation, regardless of a waiting period, and rehabilitation services are available where necessary. Where death results from an employment injury, fixed monthly payments are made to dependants.

A federal Act provides for compensation for accidents to Federal Government employees according to the scale of benefits provided by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the federal Merchant Seamen Compensation Act.

33.—Employment Injuries Reported and Compensation Paid by Workmen's Compensation Boards, 1966 and 1967

Year and Province	Employment Injuries Reported					Compensation Paid ²
	Medical Aid Only ¹	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	\$
1966						
Newfoundland.....	6,574	4,968	140	29	11,711	2,997,744
Prince Edward Island.....	1,121	1,182	14	2	2,319	303,803
Nova Scotia.....	15,302	9,862	354	34	25,552	6,651,096
New Brunswick.....	14,698	9,369	310	57	24,434	5,031,772
Quebec.....	116,143	49,057	5,401	310	171,301	49,807,382 ³
Ontario.....	244,255	104,952	4,759	330	354,296	87,104,706 ³
Manitoba.....	15,208	13,217	490	39	28,954	6,132,609
Saskatchewan.....	14,362	11,683	358	104	26,507	6,543,657
Alberta.....	31,770	23,508	913	115	56,306	14,043,411
British Columbia.....	52,542	26,749	1,325	178	80,794	29,453,302
Totals, 1966.....	512,275	254,547	14,154	1,198	782,174	208,069,452
1967						
Newfoundland.....	5,416	4,678	47	33	10,174	2,537,667
Prince Edward Island.....	1,046	1,053	5	14	2,118	608,813
Nova Scotia.....	14,524	10,080	63	35	24,702	7,384,449
New Brunswick.....	15,869	8,437	400	39	24,745	4,651,866
Quebec.....	117,730	48,687	5,614	248	172,309	49,130,314 ³
Ontario.....	241,704	106,021	4,191	316	352,232	91,309,089 ³
Manitoba.....	15,615	13,570	532	43	29,760	6,641,231
Saskatchewan.....	14,759	12,252	421	59	27,491	6,805,810
Alberta.....	33,521	22,988	1,058	123	57,690	16,138,592
British Columbia.....	50,235	25,928	1,352	156	77,671	30,299,585
Totals, 1967.....	510,419	253,694	13,713	1,066	778,892	215,507,416

¹ Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies in the several provinces.

² Includes, except where noted otherwise, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities; the Quebec compensation include: pension: awarded as well as pensions paid.

³ Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec Workmen's Compensation Acts.

Section 8.—Organized Labour*

Subsection 1.—Union Membership

Union membership at the beginning of 1968 stood at almost 2,010,000. This figure represented 31.5 p.c. of the non-agricultural paid workers in Canada, the highest percentage since 1959, and 25.4 p.c. of the over-all labour force. The increase in membership over the same date of 1967 was 89,100 or 4.6 p.c.

34.—Union Membership in Canada, 1940-68

Year	Members	Year	Members	Year	Members	Year	Members
	'000		'000		'000		'000
1940.....	362	1947.....	912	1955.....	1,268	1962.....	1,423
1941.....	462	1948.....	978	1956.....	1,352	1963.....	1,449
1942.....	578	1949 ¹	1,006	1957.....	1,386	1964.....	1,493
1943.....	665	1951 ¹	1,029	1958.....	1,454	1965.....	1,589
1944.....	724	1952.....	1,146	1959.....	1,459	1966.....	1,736
1945.....	711	1953.....	1,220	1960.....	1,459	1967.....	1,921
1946.....	832	1954.....	1,268	1961.....	1,447	1968.....	2,010

¹ Figures for years up to and including 1949 are at Dec. 31; figures from 1951 are as at Jan. 1.

² Newfoundland included from 1949.

Membership in unions affiliated with the Canadian Labour Congress (CLC) at the beginning of 1968 totalled 1,572,000, a rise of more than 8 p.c. over the previous year. CLC affiliates reporting substantial membership gains during the year were: the Auto Workers with an increase of 36,300; the Steelworkers with an increase of 15,000; the Canadian Union of Public Employees, 10,000; the Machinists, 8,600; and the Building Service Employees, 6,000.

The Confederation of National Trade Unions (CNTU) reported a total of 201,300 members, an increase of less than 2 p.c. over the previous year. The largest gains were registered by the Fédération nationale des services (Service Employees' Federation) with an increase of 7,000 members and the Fédération Canadienne des métallurgistes et des mineurs (Metallurgists and Miners' Federation) with an addition of 5,500 members; most of the latter increase was the result of a merger.

Of the 2,010,000 union members reported in the 1968 survey, two thirds were in international unions. The 108 international unions included 91 affiliated with both the CLC and the AFL-CIO, five were affiliated only with the AFL-CIO, three with the CLC only, and nine were not affiliated with any central labour body.

There were 54 national unions active in Canada, with 590,000 members; 21 of these unions, affiliated with the CLC, accounted for 15.9 p.c. of total union membership in Canada. The 12 federations of the CNTU accounted for another 9.6 p.c. There were, in addition, 21 unaffiliated unions with a total membership of 77,000.

Direct charters from the CLC were held by 143 local unions with a total membership of 15,600. Local unions holding direct charters from the CNTU numbered 50 with a membership of 7,600. Membership of the 193 local unions chartered by central labour bodies comprised 1.2 p.c. of all trade union members in Canada. Independent local organizations reported 51,000 members, or 2.5 p.c. of the total.

* A special article on the "History of the Labour Movement in Canada", prepared by Dr. Eugene Forsey, Director of Research of the Canadian Labour Congress, appears in the 1967 Canada Year Book at pp. 773-781.

35.—Union Membership, by Type of Union and Affiliation, as at January 1968

Type and Affiliation	Unions	Locals	Membership
International Unions.....	108	4,967	1,345,331
AFL-CIO/CLC.....	91	4,569	1,222,249
CLC only.....	3	41	14,571
AFL-CIO only.....	5	10	678
Unaffiliated railway brotherhoods.....	2	109	8,114
Other unaffiliated unions.....	7	238	99,719
National Unions.....	54	3,990	590,260
CLC.....	21	2,559	319,062
CNTU.....	12	980	193,709
Unaffiliated unions.....	21	451	77,489
Directly Chartered Local Unions.....	193	193	23,215
CLC.....	143	143	15,632
CNTU.....	50	50	7,583
Independent Local Organizations.....	123	123	50,927
Grand Totals.....	478	9,273	2,009,733

The United Steelworkers retained its position in 1968 as the largest union, with 145,000 members in Canada. Next in size was the United Automobile Workers, followed by the Canadian Union of Public Employees. Fourteen unions reported membership of 30,000 or more in the 1968 survey; these unions, which accounted for 47 p.c. of all union members in Canada, are listed below, with their affiliations, in order of their relative size in the current year; their relative positions in 1967 are also shown.

Relative Positions in 1968	Union and Affiliation	1968 Membership	Relative Positions in 1967
1	United Steelworkers of America (AFL-CIO/CLC).....	145,000	1
2	International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (AFL-CIO/CLC).....	127,000	4
3	Canadian Union of Public Employees (CLC).....	116,000	2
4	Public Service Alliance of Canada (CLC).....	97,800	3
5	United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC).....	77,900	5
6	International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.).....	52,500	6
7	International Brotherhood of Electrical Workers (AFL-CIO/CLC).....	51,800	8
8	International Association of Machinists and Aerospace Workers (AFL-CIO/CLC).....	51,300	9
9	International Woodworkers of America (AFL-CIO/CLC).....	49,800	7
10	Fédération nationale des services (CSN), Service Employees' Federation (CNTU).....	43,400	11
11	International Brotherhood of Pulp, Sulphite and Paper Mill Workers (AFL-CIO/CLC).....	40,700	10
12	Canadian Brotherhood of Railway, Transport and General Workers (CLC).....	34,800	12
13	Laborers' International Union of North America (AFL-CIO/CLC).....	31,800	13
14	Syndicat des fonctionnaires provinciaux du Québec (CSN), Quebec Government Employees (CNTU).....	30,000	14

A complete list of the individual international and national unions, with number of locals and membership in Canada, is carried in the annual Department of Labour publication, *Labour Organizations in Canada* available from the Queen's Printer, Ottawa, price 75 cents.

Subsection 2.—Wage Developments under Major Collective Agreements, 1968

The Canada Department of Labour obtains data on wage settlements under collective agreements on a quarterly basis. The agreements covered are limited to negotiating units of 500 employees or more in all industries, with the exception of construction. The base-rate for a negotiating unit is defined as a straight-time hourly wage rate for the lowest paid

qualified workers, usually unskilled or semi-skilled workers, although some contracts govern only skilled workmen. Thus, the wage data are not necessarily representative of the average increases enjoyed by the workers in the negotiating unit as a whole. On the other hand, the data on numbers of agreements and workers refer to all occupational groups in the negotiating units.

Wage-rate data given in Tables 36 and 37 indicate that on Dec. 31, 1968, approximately 1,000,000 workers were covered by 530 major collective agreements in negotiating units with 500 or more workers in industries other than construction. The average base-rate rose 14.9 cents, or 6.6 p.c., during the 12-month period ended Dec. 31, 1968, compared with an increase of 14.8 cents and 7.0 p.c. during the preceding 12-month period. During 1968, the consumer price index rose 4.1 p.c. and during 1967 it rose 4.0 p.c., so that, deflating the wage increases by the consumer price index increase, the average hourly base-rate increased in real terms by 2.4 p.c. during 1968 and by 2.8 p.c. during 1967.

36.—Employees Covered by All Collective Bargaining Agreements in Negotiating Units Covering 500 or more Employees in Industries other than Construction, in Effect December 1968.¹

Region or Province	Manufacturing Industries			Non-manufacturing Industries except Construction	All Industries except Construction
	Durable Goods	Non-durable Goods	Total Manufacturing		
	No.	No.	No.	No.	No.
Atlantic.....	4,980	9,085	14,065	20,250	34,315
Newfoundland.....	—	4,600	4,600	5,850	9,850
Prince Edward Island.....	—	—	—	—	—
Nova Scotia.....	4,180	2,100	6,280	3,990	15,270
New Brunswick.....	800	2,585	3,385	6,010	9,195
Quebec.....	60,710	80,690	141,400	161,649	303,049
Ontario.....	111,162	62,447	173,609	98,085	271,694
Prairies.....	1,920	3,850	5,770	54,975	60,745
Manitoba.....	1,270	2,300	3,570	20,210	23,780
Saskatchewan.....	—	—	—	16,280	16,280
Alberta.....	650	1,550	2,200	18,485	20,685
British Columbia.....	38,600	16,799	55,399	47,130	102,529
Multi-Provincial ²	31,560	15,760	47,320	190,569	237,889
Canada.....	248,932	188,631	437,563	572,658	1,010,221

¹ As of December 1968, this universe included 530 agreements.

² Covers agreements pertaining to workers located in more than one province, and the one agreement covering workers in the Northwest Territories.

37.—Annual Percentage and Cents-Per-Hour Increases in Base-Rates under Major Collective Agreements, by Month, 1968

NOTE.—Data refer to rates actually paid in the month specified; no adjustments are made for retroactive wage increases.

Month	Manufacturing					
	Durable Goods		Non-durable Goods		Total Manufacturing	
	Year-Over-Year Increase		Year-Over-Year Increase		Year-Over-Year Increase	
	p.c.	cents	p.c.	cents	p.c.	cents
January.....	4.1	9.7	5.7	11.9	4.8	10.6
February.....	4.7	11.0	5.7	12.0	5.1	11.4
March.....	4.8	11.4	5.7	11.9	5.3	11.7
April.....	6.4	15.3	5.6	11.9	6.2	13.8
May.....	6.8	16.2	5.8	12.4	6.5	14.6
June.....	6.4	15.4	6.1	12.9	6.4	14.4
July.....	7.3	17.7	5.7	12.3	6.8	15.4
August.....	7.8	18.9	5.3	11.5	6.8	15.6
September.....	7.8	18.9	6.3	13.8	7.2	16.6
October.....	7.4	18.0	6.4	14.0	7.1	16.3
November.....	7.2	17.6	6.5	14.3	7.0	16.2
December.....	7.6	18.6	6.6	14.6	7.3	16.8

37.—Annual Percentage and Cents-Per-Hour Increases in Base-Rates under Major Collective Agreements, by Month, 1968—concluded

Month	Commercial Industries except Construction		Non-commercial Industries ¹		All Industries except Construction	
	Year-Over-Year Increase		Year-Over-Year Increase		Year-Over-Year Increase	
	p.c.	cents	p.c.	cents	p.c.	cents
January.....	5.9	12.6	7.9	15.6	6.1	13.0
February.....	5.8	12.6	7.0	14.1	5.9	12.7
March.....	5.7	12.4	6.6	13.3	5.8	12.5
April.....	6.2	13.4	6.4	13.0	6.2	13.3
May.....	6.4	13.9	6.1	12.4	6.3	13.6
June.....	6.4	14.0	6.6	13.5	6.4	13.9
July.....	6.0	13.4	5.8	12.2	6.0	13.2
August.....	6.1	13.5	5.9	12.3	6.0	13.2
September.....	6.4	14.4	6.5	13.7	6.4	14.3
October.....	6.6	14.7	6.2	13.1	6.5	14.4
November.....	6.6	14.8	7.5	16.0	6.7	14.9
December.....	6.5	14.8	7.4	15.8	6.6	14.9

¹ Includes public administration and defence; hospitals, education, welfare, religion and other community service; National Capital Commission; and domestic service.

Additional data are available from the Canada Department of Labour on wage settlements under agreements newly settled during quarterly periods, including number of agreements settled, number of employees affected and duration of contracts. The agreements covered are again limited to negotiating units of 500 employees or more in all industries except construction. Details are not given here but for 1968 as a whole, 294 contracts were settled. For three of these, data are not included in the analysis as they referred solely to incentive or piece rates; the remaining 291 settlements affected the wage-rates of about 700,000 workers. On the average, the 291 settlements provided an annual percentage increase in the straight-time hourly base-rate equal to 8.0 p.c. over the lives of the contracts, compared with 8.7 p.c. for the year 1967.

Settlements during the year 1968 of one-year duration provided for increases averaging 7.3 p.c.; those of two-year duration for increases of 8.4 p.c. and 6.2 p.c. for the first and second years, respectively; and those of three-year duration of 12.0 p.c., 7.5 p.c. and 5.1 p.c. for the first, second and third years of the contract. These increases compare with those in 1967 as follows: one-year agreements, average increases of 9.7 p.c.; two-year agreements, average increases of 11.9 p.c. and 6.9 p.c.; and three-year agreements provided for average increases of 9.0 p.c., 7.9 p.c. and 5.1 p.c. for the first, second and third years of the contract.

Section 9.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Canada Department of Labour on the basis of reports from Canada Manpower Centres of the Department of Manpower and Immigration. Table 38 covers strikes and lockouts lasting ten or more man-days. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

38.—Strikes and Lockouts, by Industry, 1967 with Totals for 1963-67

Note.—Comparable statistics, except for 1961, are given in the corresponding table of previous Year Books; the latter are available in the Canada Department of Labour annual publication *Strikes and Lockouts in Canada*.

Industry	Strikes and Lockouts Beginning During Year	Strikes and Lockouts in Existence During Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Agriculture.....	1	1	6	30
Forestry.....	5	5	1,817	18,930
Fishing and Trapping.....	—	—	—	—
Mines.....	21	24	7,084	32,050
Metal.....	8	11	2,948	18,330
Mineral fuels.....	5	5	1,706	7,520
Non-metal.....	6	6	2,309	5,260
Quarries.....	1	1	11	60
Incidental services.....	1	1	110	880
Manufacturing.....	255	267	91,531	1,976,260
Food and beverages.....	35	35	5,536	86,550
Tobacco products.....	—	—	—	—
Rubber.....	6	6	723	2,900
Leather.....	2	2	741	21,660
Textiles.....	7	8	2,034	70,760
Knitting mills.....	1	1	8	1,300
Clothing.....	1	1	8	450
Wood.....	16	16	6,793	295,100
Furniture and fixtures.....	10	10	1,329	18,070
Paper.....	18	20	5,071	80,170
Printing and publishing.....	3	5	1,128	90,660
Primary metals.....	21	23	6,606	102,520
Metal fabricating.....	34	35	5,578	91,170
Machinery.....	17	17	2,919	127,750
Transportation equipment.....	30	31	16,259	227,850
Electrical products.....	21	23	29,011	596,460
Non-metallic mineral products.....	12	12	3,184	57,270
Petroleum and coal products.....	—	—	—	—
Chemical products.....	11	11	3,836	74,990
Miscellaneous manufacturing.....	10	11	767	30,630
Construction.....	118	119	42,491	976,400
Transportation and Utilities.....	37	43	29,680	429,670
Transportation.....	22	25	18,753	316,480
Storage.....	2	2	97	560
Communication.....	5	6	1,265	5,770
Power, gas and water.....	8	10	9,565	106,860
Trade.....	18	19	3,090	48,510
Finance.....	2	2	71	460
Insurance and real estate.....	2	2	71	460
Service.....	30	31	65,875	361,720
Education.....	9	10	62,124	338,560
Health and welfare.....	7	7	2,440	12,050
Services to business.....	1	1	13	250
Personal services.....	9	9	972	2,780
Miscellaneous services.....	4	4	326	8,080
Public Administration.....	11	11	10,373	130,730
Federal administration.....	1	1	170	90
Provincial administration.....	1	1	260	500
Local administration.....	9	9	9,953	130,140
Totals.....	1967	498	522	252,018
	1966	582	617	411,459
	1965	478	501	171,870
	1964	327	343	100,535
	1963	318	332	83,428
				3,974,760
				5,178,170
				2,349,870
				1,580,550
				917,140

CHAPTER XIX.—TRANSPORTATION

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

The physiography, the climate, the dispersion of the people and even the history of Canada present unusual difficulties and challenges in the organization, the operation and the regulation of its transportation services. Considering the physical aspect only, the country extends 4,000 miles from east to west—a formidable barrier of time and distance—and added to this, the grain of the country is decidedly and perversely north-south, so that regions of the country are separated from one another—by water, as in the case of the Island of Newfoundland, Prince Edward Island and Vancouver Island; by rough, rocky, forest terrain as in the New Brunswick-Quebec border region and in the area north of Lakes Huron and Superior between the heavily populated sections of Ontario and Quebec and the prairie region of the mid-west; and by the mountain barrier between the prairies and the Pacific Coast. Furthermore, in much of the relatively flat inland areas of Canada, the many lakes and rivers, the exposed rocks, the marshlands and, in the North, the permafrost are problems for all modes of transportation. The St. Lawrence-Great Lakes waterway into the interior of the Continent is a redeeming feature but even this had to be transformed by man before it could become a commercial shipping route.

The achievement of efficient and low-cost transportation in the face of these many problems has been one of Canada's most important goals, for a good transportation network is a necessity of the country's existence. However, the tremendous investment required for the provision of such a network in this vast country is not supported by the intensity of demand to be found in more densely populated countries. Thus, the relatively small market in relation to the investment is a continuing problem that is being faced by study and research in many fields and by careful but nevertheless imaginative development. The latter includes new types of vehicles for Canada's northern terrain, truck interlining, inter-modal container services, pipelines, the high-speed "turbo-train", continuously coupled unit trains, and new forms of urban transit. Much attention is also being given to the harmonization of transport regulations and operation as an essential part of this general endeavour.

Considering the transportation picture as a whole—passenger and freight, commercial and private—Canada is fortunate in not having to depend too heavily on any one type of movement. Certainly, in passenger transportation the private automobile dominates short-distance movement but growing urbanization is sustaining urban transit (bus and subway) at high traffic levels. For intercity journeys, the private automobile is again the major factor but air, rail and bus services are very important. Freight transportation is also characterized by a balanced use of the various transportation facilities. The dominant economic factor in present-day Canadian transportation is competition.

The following figures show the relative importance of the various forms of transport in terms of passenger-miles and freight ton-miles operated (local car traffic, urban bus and truck traffic, subway traffic and certain other transport movements are excluded). Although these measures do not take into account such factors as the value of the service or the costs of providing it, they are nevertheless good indicators of the general position of each mode.

<i>Service</i>	<i>Passenger- Miles</i>	<i>Freight Ton-Miles</i>
	p.c.	p.c.
Car or truck.....	82	10
Intercity bus.....	7	—
Railway.....	4	41
Airline.....	7	—
Water transport.....	—	25
Pipeline.....	—	24
	100	100
	==	==

PART I.—RAIL TRANSPORT*

Since Confederation the railways of Canada have been the principal transport facility throughout, and beyond, the nation. The two great transcontinental systems, supplemented by a major north-south line on the West Coast and a few regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes.

The two nation-wide railway companies control a wide variety of Canadian and international transport and communications services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. It is the only railway serving all 10 provinces and has completed a branch line to serve the Great Slave Lake area of the Northwest Territories. In addition, it operates a highway service, a fleet of coastal steamships, an extensive express service, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European and Caribbean points. The Canadian National, jointly with the Canadian Pacific Railway Company, operates a national telecommunications system that employs modern microwave, high-speed teletype and private wire networks, telex, data and weather facsimile transmission and movement of telegrams to any point in the world. The Canadian Pacific Railway Company is a joint-stock corporation also operating a transcontinental railway, an express service, a domestic truck and bus network, a fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels and a domestic and foreign airline service (see p. 858).

The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over an 800-mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with several northern branch lines recently

* The statistical data in this Part were revised in the Transportation and Public Utilities Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division. A special article on operational and technological changes in rail transport appears in the 1965 Year Book at pp. 755-761.

completed or under construction. Interline barge and rail connections at Vancouver provide a complete service to any railway point on the Continent. The PGE is fully dieselized and controlled by an intricate microwave system from its Vancouver offices.

Government Aid to Railways.—In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues came later and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government. During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure through funds raised by the issue of new bonds with Federal Government guarantee. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1967 amounted to \$1,196,694,500.

As discussed on pp. 875-876, the National Transportation Act (SC 1967, c. 69), administered by the Canadian Transport Commission, expresses a national transportation policy for Canada aimed at the development of "an economic, efficient and adequate transportation system making the best use of all available modes of transportation at the lowest total cost". The new law is expected to provide the railways with greater freedom to meet the competition with which they are faced and to develop as an integral part of today's complex transportation system.

Under the Act, the 1966 level of Federal Government rail subsidy of \$110,000,000 a year will decline by \$14,000,000 a year until it disappears at the end of 1974. The Crows Nest Pass rates on grain and flour from Western Canada and the rates under the Maritime Freight Rates Act remain in force. The so-called "bridge subsidy" paid under the Railway Act to the major railways for operation of lines through the light-traffic territory in the Lake Superior District ceased at the end of 1966 but the reduction in freight rates made possible by the bridge subsidy remains in force. However, commencing on Mar. 23, 1968, the railways were permitted to make successive annual increases for a period of three years to the freight rates over the territory formerly covered by the bridge subsidy, to yield additional operating revenues in the first year of \$3,000,000, in the second year of \$2,000,000, and in the third year of \$2,000,000.

Track Mileage.—Construction was begun in 1835 on the first railway in Canada—the short link of 14.5 miles between Laprairie and St. Johns, Que.—but only 66 miles were in operation by 1850. The first great period of construction was in the 1850s when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific Railways contributed to another period of rapid expansion in the 1870s and 1880s. In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

There has been little change in total track mileage since the 1920s. The mileage peak was reached in 1959 and, except for an increase in 1967 resulting from the inclusion of mileage operated by the Cartier Railway in Quebec, there has since been a gradual decline, new construction being more than offset by abandonment of unprofitable lines. In recent years, the development of a number of large projects in districts far removed from transport facilities and the opening up of the Northwest Territories have necessitated the

building of branch lines. Five such lines, totalling 118 miles, were completed by the CN in 1968; in Ontario, a 68-mile line to serve an iron mine in the Red Lake area; in Manitoba, a 12-mile line from Stall Lake to a copper-zinc mine at Osborne Lake; in Saskatchewan, an 18-mile line from Watrous to a potash plant near Guernsey, and an eight-mile line to a pulp mill at Prince Albert; and, in Alberta, a 12-mile line from a point near Fort Saskatchewan to a fertilizer complex near Redwater. All of the main track for the 235-mile line to give access to Alberta's northern resources was laid by the end of 1968, and three bridges completed. In British Columbia, the first leg of the Takla Lake extension to the PGE—75 miles of track between Odell, 30 miles north of Prince George, and Fort St. James—was opened to traffic in August 1968. Clearing of the right-of-way for the remaining 73 miles was under way.

1.—Railway Track Mileage Operated, 1900-67

NOTE.—Figures of total mileage of first main track operated for 1835-1959 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

FIRST MAIN TRACK MILEAGE ¹		TRACK MILEAGE BY AREA AND TYPE				
Year	Miles in Operation	Area and Type of Track	1964	1965	1966	1967
	No.		No.	No.	No.	No.
1900.....	17,657	First Main—				
1905.....	20,487	Newfoundland.....	934	936	936	936
1910.....	24,731	Prince Edward Island.....	279	279	279	252
1915.....	34,882	Nova Scotia.....	1,314	1,314	1,313	1,313
1920.....	38,805	New Brunswick.....	1,760	1,730	1,671	1,667
1925.....	40,350	Quebec.....	5,163	5,238	5,138	5,327 ²
1930.....	42,047	Ontario.....	10,073	9,950	9,965	9,979
1935.....	42,916	Manitoba.....	4,858	4,735	4,735	4,735
1940.....	42,565	Saskatchewan.....	8,566	8,522	8,567	8,567
1945.....	42,352	Alberta.....	5,682	5,723	5,680	5,680
1950 ³	42,979	British Columbia.....	4,329	4,333	4,322	4,315
1955.....	43,444	Yukon Territory.....	58	58	58	58
1960.....	44,029	United States.....	339	339	339	339
1961.....	43,689	Totals, First Main.....	43,355	43,157	43,003	43,168
1962.....	43,654	Second main.....	2,010	2,004	1,999	1,990
1963.....	43,625	Other main.....	56	56	57	65
1964.....	43,355	Industrial.....	1,281	1,309	1,313	1,379
1965.....	43,157	Yard and sidings.....	11,541	11,676	11,728	11,928
1966.....	43,003	Grand Totals ⁴	58,243	58,202	58,100	58,530
1967.....	43,168					

¹ Defined as a single track extending the entire distance between terminals, upon which the length of the road is based.

² Includes 190 miles of track of the Cartier Railway which began operations in 1963 but was not included in the statistics until 1967.

³ Newfoundland included from 1950.

⁴ Excludes joint track amounting to 58 miles in 1964, 55 miles in 1965, 74 miles in 1966 and 143 miles in 1967.

Rolling-Stock.—Table 2 shows the numbers of the various types of freight and passenger equipment in operation in 1959, in 1966 and 1967 revealing a generally downward trend over the period; however, these figures do not reflect the offsetting trend toward larger, more efficient cars and locomotives or the steady improvement in speed of movement facilitated by modernized handling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified to make them suitable for specific types of traffic or are replaced by special-purpose equipment designed for distinctive hauling jobs. The average capacity of all freight cars was 55.7 tons in 1967 compared with 51.1 tons in 1959. Also, although the number of diesel-electric locomotives in service has remained fairly static over this period, it should be noted that an extensive program of power up-grading has been followed by the railway companies. The combined tractive effort (the force exerted by powered equipment measured at the rim of the driving wheels) of all locomotives in 1967 averaged 56,425 lb. as compared with 53,368 lb. in 1959.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1959, 1966 and 1967

Type	1959	1966	1967 ¹	Type	1959	1966	1967 ¹
No.	No.	No.	No.	No.	No.	No.	No.
Locomotives	4,720	3,329	3,311	Freight Cars	194,512	185,964	188,770
Steam—				Automobile.....	7,270	3,777	3,758
Coal-burning.....	1,143	—	—	Ballast.....	3,140	2,877	2,862
Oil-burning.....	371	—	—	Box.....	114,181	105,540	105,121
Diesel-electric.....	3,155	3,200	3,150	Flat.....	12,270	14,958	15,469
Electric.....	51	19	19	Gondola.....	20,428	19,992	20,633
Other ²	—	110	142	Hopper.....	15,601	19,781	21,077
Passenger Cars	5,456	3,660	3,444	Ore.....	5,964	6,110	6,742
Coach.....	1,409	987	884	Refrigerator.....	10,155	8,023	8,030
Combination.....	182	107	94	Stock.....	5,025	3,124	3,004
Colonist.....	96	34	33	Tank.....	455	501	532
Dining.....	159	152	160	Other.....	23	1,281	1,452
Parlour.....	143	131	133	Privately Owned Cars ³ ..	4,853	6,750	14,970
Sleeping.....	919	679	645	Tank.....	4,809	6,390	14,568
Baggage, express and postal.....	2,353	1,424	1,346	Other.....	44	360	402
Self-propelled.....	128	115	115				
Other.....	67	31	34				

¹ Includes 17 locomotives, 9 passenger cars and 589 freight cars of the Cartier Railway; rolling-stock for this railway was not included before 1967. ² Road freight units. ³ Includes those of non-rail industrial firms such as oil, chemical and railway car leasing companies which furnish freight cars to, or on behalf of, any railway line.

Traffic, Employment and Finance Statistics.—Statistics presented under this heading are for the Canadian National Railways, the Canadian Pacific Railway Company and 21 other common carrier lines whose gross revenues are \$500,000 or more annually. Excluded are the British Columbia Hydro and Power Authority Railway line and the Cartier Railway, and lines with annual revenues of less than \$500,000 annually, whose operations account for about 1 p.c. of the total.

Table 3 gives traffic and employment statistics for the above railways for the years 1963-67 and Table 4 gives similar data for the Canadian National and Canadian Pacific railways separately for 1966 and 1967.

3.—Statistics of Total Railway Traffic and Employment, 1963-67

(Excludes data re the British Columbia Hydro and Power Authority Railway and the Cartier Railway in Quebec)

Item	1963	1964	1965	1966	1967
Miles of road operated (monthly av.)... No.	44,347.96	44,265.06	43,960.04	43,953.16	43,858.24
Freight—					
Tons carried, revenue ¹ tons	186,270,640	209,503,313	225,356,167	237,718,214	237,121,237
Ton-miles, revenue..... '000	74,218,283	84,953,330	87,052,200	94,944,223	92,239,045
Ton-miles, revenue and non-revenue... "	76,046,295	86,721,070	88,924,992	96,805,689	94,229,101
Passengers—					
Revenue passengers ¹ No.	20,621,119	22,910,928	23,610,374	23,194,018	24,626,390
Revenue passenger-miles..... "	2,067,252	2,680,625	2,664,380	2,587,435	3,133,179
Gross Ton-Miles—					
Freight train..... '000	159,668,270	179,649,563	183,692,922	195,421,157	188,881,226
Passenger train..... "	18,518,302	20,110,585	20,147,373	19,380,589	22,334,185
Totals, Ton-Miles '000	178,186,572	199,760,148	203,840,295	214,801,746	211,215,411
Train-Miles—					
Freight service..... No.	62,278,229	66,705,677	67,803,428	68,303,326	64,774,033
Passenger service..... "	28,045,961	28,603,043	29,463,880	27,625,417	29,647,221
Work service..... "	2,301,745	1,924,253	1,864,877	1,921,822	1,962,755
Totals, Train-Miles No.	92,625,935	97,232,973	99,132,185	97,850,565	96,384,009

¹ Includes traffic handled by more than one railway.

3.—Statistics of Total Railway Traffic and Employment, 1963-67—concluded

Item	1963	1964	1965	1966	1967
Car-Miles—					
Freight..... '000	3,442,422	3,783,361	3,819,398	4,003,515	3,840,876
Passenger..... "	289,841	308,835	306,536	276,070	301,260
Totals, Car-Miles..... '000	3,732,263	4,092,196	4,125,934	4,279,585	4,142,136
Railway employees..... No.	131,665	134,124	133,812	130,790	130,508
Railway payroll..... \$ '000	645,524	699,735	735,442	762,762	835,761
Payroll chargeable to railway operating expenses..... \$ "	597,436	645,993	675,750	698,318	762,779

4.—Statistics of Railway Traffic and Employment for the Canadian National Railways, the Canadian Pacific Railways and 23 Major Carriers, 1966 and 1967

Item	Canadian National Railways		Canadian Pacific Railways		Totals, 23 Railways	
	1966	1967	1966	1967	1966	1967
Miles of road operated (monthly av.)..... No.	22,783.00	22,700.50	16,649.90	16,641.00	43,953.16	43,858.24
Freight—						
Tons carried—revenue ¹ tons	91,430,400	89,375,391	71,940,895	69,061,993	237,718,214	237,121,237
Ton-miles—revenue..... '000	45,494,121	44,709,129	37,950,302	35,380,579	94,944,223	92,239,045
Ton-miles—revenue and non-revenue..... "	46,547,772	45,940,630	38,639,703	36,029,243	96,805,689	94,229,101
Passengers—						
Revenue passengers ¹ No.	16,266,191	17,620,665	6,018,668	6,138,757	23,194,018	24,626,390
Revenue passenger-miles..... '000	1,931,541	2,424,366	557,345	624,729	2,587,435	3,133,179
Gross Ton-Miles—						
Freight train..... '000	94,990,280	92,669,196	78,945,574	73,707,917	195,421,157	188,881,226
Passenger train..... "	15,093,542	17,288,741	3,387,773	4,246,925	19,380,589	22,334,185
Totals, Ton-Miles.... '000	110,083,822	109,957,937	82,333,347	77,954,842	211,801,746	211,215,411
Train-Miles—						
Freight service..... No.	35,205,297	33,753,669	26,930,407	24,934,782	68,303,326	64,774,033
Passenger service..... "	20,082,132	21,137,461	5,919,021	6,888,218	27,625,417	29,647,221
Work service..... "	1,411,165	1,404,498	182,777	220,132	1,921,822	1,962,755
Totals, Train-Miles.. No.	56,698,594	56,295,628	33,032,205	32,043,132	97,850,565	96,384,009
Car-Miles—						
Freight..... '000	2,011,821	1,957,631	1,615,193	1,500,141	4,003,515	3,840,876
Passenger..... "	208,204	224,634	51,865	62,018	276,070	301,260
Totals, Car-Miles... '000	2,220,026	2,182,265	1,667,058	1,562,159	4,279,585	4,142,136
Railway employees..... No.	73,698	75,091	47,625	46,060	130,790	130,508
Railway payroll..... \$ '000	434,948	486,060	268,420	285,751	762,762	835,761
Payroll chargeable to railway operating expenses.. "	396,140	441,737	248,189	262,821	698,318	762,779

¹ Includes traffic handled by more than one railway.

The total tonnage of freight carried by all common carrier railways (including national loadings and receipts from United States connections) has increased steadily over the past few years. In 1967, mine products accounted for 43.7 p.c. of the total; the increase of 11.9 p.c. in mine products loadings over 1966 was attributable mainly to the inclusion of Cartier Railway operations in Quebec. The minerals carried in largest volume in 1967 were iron ore, other ores and concentrates and bituminous coal. Of the total of 210,475,044 tons of freight carried (excluding freight handled by more than one railway and in inter-

New methods and facilities speed the movement of freight.



Containers, here being transferred from flat cars to trucks, carry goods from source to destination without disturbance, using a multi-modal system involving land, sea and air transport.

New terminals at Montreal and Toronto, equipped with such mechanical innovations as in-floor towlines, hydraulic unloading devices, conveyor systems and powered sorting rings, move large volumes of goods quickly and efficiently with a minimum of manual handling.



mediate switching), manufactured products accounted for 31.4 p.c., agricultural products for 14.0 p.c., forest products for 10.0 p.c., animal products for 0.7 p.c. and less-than-carload lots for 0.3 p.c.

5.—Commodities Hauled as Freight by Railways, 1963-67

NOTE.—In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways. Freight carried by the Cartier Railway is included in 1967.

Commodity	1963	1964	1965	1966	1967
	tons	tons	tons	tons	tons
Agricultural Products	29,303,974	35,686,429	30,369,784	35,165,635	29,426,151
Wheat	16,811,535	21,154,965	17,173,187	21,893,103	16,025,009
Corn	966,449	1,037,039	1,090,003	1,006,127	826,623
Oats	1,556,288	1,229,384	1,344,012	1,110,485	1,113,643
Barley	2,189,993	2,706,816	2,253,706	2,242,250	3,083,696
Other grain	308,139	344,983	338,361	469,772	433,125
Flour, wheat	1,545,738	1,859,599	1,528,737	1,476,035	1,214,107
Other mill products	1,593,722	2,253,443	1,819,690	1,748,540	1,738,258
Potatoes, other than sweet	797,953	845,992	878,713	740,331	752,355
Sugar beets	609,150	618,206	509,311	492,309	468,119
Flaxseed	368,712	656,616	502,697	770,207	561,951
Other agricultural products	3,056,295	2,979,386	2,931,367	3,216,476	3,214,260
Animal Products	1,529,037	1,664,139	1,466,380	1,361,228	1,378,486
Cattle and calves	194,571	233,647	247,557	253,250	262,494
Other livestock	126,960	129,058	108,164	79,983	82,639
Meats and other edible packing-house products	672,350	757,418	635,258	594,779	730,753
Other animal products	535,156	544,016	475,401	433,216	302,600
Mine Products	71,828,970	75,242,381	82,453,654	82,161,162	91,953,988
Coal, bituminous	10,002,904	10,449,727	10,725,702	9,946,243	9,610,093
Other coal and coke	2,356,378	2,554,441	2,715,381	2,696,564	2,509,155
Iron ore	27,698,186	25,725,343	29,716,750	30,322,943	42,014,424
Ores and concentrates	7,364,175	9,344,104	11,508,223	11,958,267	13,697,629
Gravel and sand	6,513,801	7,770,785	7,299,497	6,926,139	5,215,493
Stone and rock, broken, ground and crushed	5,430,004	5,387,391	6,123,381	6,079,453	5,459,206
Salt	1,194,617	1,268,105	1,461,173	1,276,302	1,363,121
Phosphate rock	1,023,821	1,159,566	1,425,307	1,797,824	1,892,099
Sulphur	1,309,600	1,890,805	2,060,798	1,988,338	2,257,224
Asbestos, not further processed than milled	1,054,276	1,206,608	1,176,143	1,257,248	1,178,713
Gypsum, crude	4,841,053	4,888,650	4,709,639	4,490,907	3,721,852
Other mine products	3,040,155	3,596,856	3,536,660	3,420,934	3,034,979
Forest Products	15,927,443	17,731,444	18,443,714	20,018,162	21,037,263
Logs, butts, bolts, posts, poles and piling, wooden	2,632,962	2,878,683	2,728,026	2,855,912	3,036,932
Pulpwood	4,857,912	6,026,932	7,213,616	8,830,935	9,010,266
Lumber, shingles and lath	6,941,623	7,241,194	6,871,158	6,638,619	6,369,326
Veneer, plywood, and built-up wood	887,076	989,971	1,061,932	1,186,997	1,160,166
Other forest products	607,870	594,664	568,982	505,699	560,573
Manufactures and Miscellaneous	52,062,773	58,413,648	62,848,885	65,841,178	65,997,755
Gasoline and petroleum products	7,647,090	8,124,687	8,854,208	9,390,586	10,119,417
Fertilizers	3,352,315	3,693,204	4,557,508	5,958,329	6,468,071
Iron and steel (bar, sheet, structural, pipe)	4,056,599	5,472,140	5,358,719	5,396,331	4,967,717
Automobiles, trucks and parts	2,142,845	2,278,802	2,795,878	3,079,256	3,292,259
Cement	1,451,026	1,787,747	2,037,131	2,123,965	1,778,145
Wood pulp	3,186,693	3,431,137	3,538,129	3,846,137	4,033,064
Newsprint	4,121,218	4,497,987	4,772,914	5,053,177	4,975,044
Paper products and articles	2,569,820	2,765,142	2,932,569	3,239,213	3,173,095
Food products	1,445,897	1,545,857	1,552,481	1,636,882	1,628,060
Feed, animal and poultry	1,555,022	1,618,957	1,546,327	1,340,487	1,310,450
Scrap iron and scrap steel	1,413,518	1,656,025	2,189,398	1,968,177	1,623,016
Other manufactures and miscellaneous	19,120,730	21,541,963	22,713,623	22,808,638	22,629,057
Less-than-Carload Lots	1,083,429	958,344	1,229,470	963,702	681,401
Grand Totals	171,735,626	189,696,385	196,816,887	205,511,067	210,475,044

Tables 6 to 12 give information on capital liability and capital investment in road and equipment, and on operating revenues, expenses and net income of all common carrier railways operating in Canada, except that of the Cartier Railway which is not available. A Uniform Classification of Accounts has been in operation for the Canadian National and the Canadian Pacific Railways since Jan. 1, 1956 and for other common carrier railways since Jan. 1, 1957. In transportation statistics, a distinction is made between expenditures and expenses. In the following data, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operation incident thereto, including maintenance and depreciation of the plant used in such service.

6.—Capital Liability of Railways, 1958-67

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total ¹	Year	Stocks	Funded Debt	Total ¹
	\$	\$	\$		\$	\$	\$
1958.....	2,646,659,697	1,953,114,826	4,599,774,523	1963.....	2,791,044,973	2,183,556,139	4,974,601,112
1959.....	2,669,062,269	2,122,675,213	4,791,737,482	1964.....	2,815,148,215	2,181,454,852	4,996,603,067
1960.....	2,725,827,684	2,244,571,812	4,970,399,496	1965.....	2,843,118,935	2,187,613,273	5,030,732,208
1961.....	2,748,537,919	2,234,316,735	4,982,854,654	1966.....	2,896,641,376	2,205,599,116	5,102,240,492
1962.....	2,769,152,492	2,245,189,028	5,014,341,520	1967.....	2,438,914,571	2,356,146,688	4,795,061,259

¹ Exclusive of approximately \$40,000,000 railway debt in Newfoundland.

7.—Capital Invested in Railway Road and Equipment Property, 1963-67

NOTE.—Credit entries in this table result when the annual "write-offs" are greater than the annual investment in any category.

Investment	1963	1964	1965	1966 [*]	1967
	\$	\$	\$	\$	\$
Road.....	125,463,519	74,388,731	84,097,911	98,279,584	107,331,272
Equipment.....	Cr. 16,753,029	40,086,021	100,984,284	108,644,249	95,014,300
General.....	84,786	45,989	325,546	1,134,113	993,473
Undistributed.....	Cr. 2,626,787	Cr. 7,538,650	Cr. 34,923,757	Cr. 18,946,523	7,741,646
CNR non-rail property....	3,771,874	7,219,816	4,768,492	8,001,227	Cr. 6,260,116
CPR " "	Cr. 8,845,548	Cr. 17,639,710	Cr. 43,698,195	Cr. 26,876,504	11,574,469
Other " "	2,446,787	2,881,244	4,005,946	Cr. 71,246	2,417,292
Totals.....	106,168,459	106,982,091	150,483,984	189,111,423	211,080,691
Cumulative investment to Dec. 31.....	7,027,154,986	7,134,137,077	7,284,621,061	7,473,732,484	7,684,813,176

Capital Structure and Financial Statistics of the Canadian National Railway System.—In view of the interest in Canada's publicly owned railway, the capital structure of the Canadian National Railway System is given separately in Table 8 and financial details in Table 9. The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest undertaken by the company on its formation in 1923 are described in the 1955 Year Book, pp. 840-847. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid interest on loans, and certain loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also, for a term of 10 years ended Jan. 1, 1962, the Railway was not obliged to pay interest on \$100,000,000 of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced. By the end of 1967, the proportion represented by equity capital in shareholders' account was 50.5 p.c.

8.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1958-67

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Total
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	\$	\$	\$	\$	\$	\$
1958.....	1,704,387,845	4,504,203	1,024,710,205	9,098,765	484,791,699	3,227,492,717
1959.....	1,723,909,722	4,503,549	1,335,510,205	5,548,765	345,684,052	3,415,156,293
1960.....	1,721,143,162	4,499,284	1,677,209,478	3,098,765	148,021,700	3,553,972,389
1961.....	1,744,673,266	4,499,273	1,670,653,176	2,423,765	164,593,150	3,586,842,630
1962.....	1,767,976,925	4,499,261	1,630,895,308	2,423,765	209,026,793	3,614,822,052
1963.....	1,792,380,188	4,485,785	1,378,875,000	2,023,764	410,354,762	3,588,119,499
1964.....	1,817,243,906	4,345,185	1,367,811,500	2,023,764	410,354,762	3,601,779,117
1965.....	1,843,209,298	4,345,185	1,366,061,500	2,023,764	410,354,762	3,625,994,509
1966.....	1,871,426,675	4,345,185	1,325,461,500	2,023,764	445,354,762	3,648,611,886
1967.....	1,888,727,368	4,345,185	1,196,694,500	2,023,764	645,994,421	3,737,785,238

The financial details presented in Table 9 are those of the Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. In conformity with the requirements of the Uniform Classification of Accounts adopted Jan. 1, 1956, tax accruals and rents are charged to operating expenses.

9.—Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System (Canadian and United States Operations), 1958-67

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit ¹	Cash Deficit or Surplus ²
	\$	\$	\$	\$	\$	\$
1958.....	704,947,410	719,211,865	Dr. 4,779,895	46,521,236	Dr. 51,301,131	Dr. 51,591,424
1959.....	740,165,041	741,852,260	8,416,237	52,918,886	" 44,502,649	" 43,588,290
1960.....	693,141,106	705,818,310	1,504,828	69,469,961	" 67,965,133	" 67,496,777
1961.....	710,305,173	722,147,583	5,539,970	73,404,523	" 67,864,553	" 67,307,772
1962.....	738,324,754	738,882,680	23,308,683	74,443,482	" 51,134,799	" 48,919,454
1963.....	762,350,334	752,829,782	36,622,626	76,252,867	" 39,630,241	" 43,013,517
1964.....	822,483,679	811,471,248	37,886,007	74,673,809	" 36,787,802	" 38,725,904
1965.....	870,250,352	855,687,971	43,547,754	73,808,456	" 30,260,702	" 33,414,884
1966.....	953,219,471	923,801,723	62,535,164	76,983,524	" 14,448,360	" 22,155,732
1967.....	995,767,669	986,399,446	40,268,311	79,599,942	" 39,331,631	" 38,306,682

¹ Includes appropriations for insurance fund.

² Contributed by or paid to the Government of Canada.

Revenues, Expenses and Net Income.—Railway operating revenues and expenses of all common carrier railways operating in Canada (except the Cartier) continue to rise, both reaching peak levels in 1967; increases over 1966 amounted to 2.6 p.c. and 5.0 p.c., respectively, and, because the increase in expenses was lower than that in revenues, net earnings increased.

Of the total operating expenses in 1967 amounting to \$1,443,956,115, those connected with the transporting of persons and property, such as station, yard and terminal services and employees, wharves, fuel, etc., accounted for 38.5 p.c.; equipment maintenance for 21.9 p.c.; road maintenance for 18.8 p.c.; rents and taxes for 7.1 p.c.; expenses connected with traffic soliciting, such as advertising and information, ticket and freight offices, etc., for 2.8 p.c.; and miscellaneous expenses, including incidentals, dining and buffet services, grain elevators, etc., for the remaining 10.9 p.c. These proportions have remained fairly constant in recent years.

19. —Operating Revenues and Expenses of All Railways, 1958-67

NOTE.—Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition. These data cover all common carrier rail operations in Canada and therefore do not agree with those presented in Table 11 which represent only 23 of the larger lines.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight-Train Revenue per Freight-Train Mile	Passenger-Train Revenue per Passenger-Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	\$	\$	p.c.	\$	\$	\$	\$	\$
1958.....	1,163,735,417	1,132,277,504	97.30	25,766	25,070	696	14.51	3.11
1959.....	1,224,567,928	1,166,306,724	95.24	27,093	25,804	1,289	15.48	3.29
1960.....	1,151,655,456	1,109,470,426	96.34	25,544	24,608	936	15.54	3.46
1961.....	1,156,480,700	1,114,432,525	96.36	25,736	24,800	936	16.72	3.32
1962.....	1,165,296,722	1,119,662,072	96.08	26,002	24,984	1,018	16.91	3.56
1963.....	1,210,209,799	1,149,530,526	94.99	27,051	25,695	1,356	17.04	3.51
1964.....	1,324,422,492	1,241,258,655	93.72	29,857	27,982	1,875	17.51	3.64
1965.....	1,372,304,959	1,291,840,958	94.14	30,927	29,114	1,813	17.82	3.68
1966.....	1,480,822,951	1,374,872,316	92.85	33,548	31,148	2,400	19.31	3.72
1967.....	1,519,392,966	1,443,956,115	95.04	34,355	32,649	1,706	18.74	4.28

11.—Rail Operating Revenues, Expenses and Net Income of the Larger Railways, 1966 and 1967

Item	CNR		CPR		Totals, 23 Railways	
	1966	1967	1966	1967	1966	1967
	\$	\$	\$	\$	\$	\$
Operating Revenues.....	842,117,663	879,762,100	607,081,780	614,436,233	1,626,502,151	1,670,859,774
Railway—						
Freight.....	648,491,105	593,712,797	466,460,799	466,296,632	1,273,455,956	1,216,723,742
Passenger.....	44,364,780	57,429,792	16,059,291	19,133,339	62,791,961	78,724,561
Sleeping and parlour car.....	9,487,718	10,743,647	1,841,508	2,322,534	11,497,128	13,179,019
Mail.....	11,126,663	12,360,730	2,049,610	2,387,252	15,194,062	16,618,387
Express.....	7,757,586	11,752,543	3,184,137	4,101,705	12,634,488	17,434,037
Switching.....	3,664,819	3,879,344	3,113,354	3,272,508	9,279,497	9,906,954
Payments relating to the National Transportation Act..... ¹		63,079,801	43,495,877	44,359,872	44,414,682	108,523,343
Incidental.....	24,565,935	26,909,902	16,879,931	18,065,187	43,594,925	47,627,230
All other.....	1,283,543	1,509,346	1,523,805	1,631,903	3,422,386	3,946,342
Totals, Railway..	750,742,149	781,377,902	554,608,312	561,570,932	1,476,285,085	1,512,683,615
Express.....	40,968,437	43,311,501	28,487,903	26,810,163	69,672,630	70,262,594
Commercial communications.....	47,077,000	50,555,000	23,985,565	26,055,138	76,834,696	82,750,345
Highway transport (rail)	3,330,077	4,517,697	—	—	3,709,740	5,163,220
Operating Expenses.....	806,502,270	858,851,559	554,681,560	572,244,409	1,507,121,095	1,581,496,894
Railway—						
Road maintenance...	141,660,622	147,996,993	85,167,925	87,352,973	254,924,416	267,008,487
Equipment maintenance.....	162,318,783	175,610,968	108,211,661	114,012,191	295,578,959	314,809,843
Traffic.....	20,689,666	21,053,356	15,264,433	17,195,383	37,904,865	40,224,965
Transportation (railway line).....	286,428,738	305,918,544	192,721,003	203,926,435	521,462,733	554,869,589
Miscellaneous railway operations.....	13,327,401	17,296,348	5,939,196	7,371,322	19,636,547	25,112,586
General.....	72,463,694	72,515,639	43,566,816	46,086,814	126,708,342	130,944,902
Equipment rents.....	Cr. 572,885	Cr. 320,467	Cr. 2,640,876	Cr.1,034,442	6,013,583	7,503,725
Joint facility rents.....	33,636	149,017	1,474,486	1,688,348	2,892,748	2,867,340
Railway tax accruals..	24,797,279	27,840,910	54,516,184	45,088,703	102,054,450	92,191,474
Totals, Railway..	721,146,934	768,061,308	504,220,828	521,687,727	1,367,176,643	1,435,532,911
Express.....	40,533,687	42,584,274	28,341,203	26,663,463	69,092,000	69,399,453
Commercial communications.....	41,927,596	43,955,835	22,119,529	23,893,219	67,670,306	71,770,191
Highway transport (rail)	2,894,053	4,250,142	—	—	3,182,146	4,794,339
Net Operating Income...	35,615,393	20,910,541	52,400,220	42,191,824	119,381,056	89,362,880
Railway.....	29,595,215	13,316,594	50,387,484	39,883,205	109,108,442	77,150,704
Express.....	434,750	727,227	146,700	146,700	580,630	863,141
Commercial communications.....	5,149,404	6,599,165	1,866,036	2,161,919	9,164,390	10,980,154
Highway transport (rail)	436,024	267,555	—	—	527,594	368,881

¹ Included in freight revenues.

Railway Accidents.—Accidents shown in Table 12 (for all common carrier railways operating in Canada) include all those in which railway trains were involved and accidents on railway property; all passengers injured are included but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded. The classification of accidents used in reporting other DBS statistics treats collisions between motor vehicles and trains as motor vehicle accidents. Therefore, care should be exercised when compiling total accidental deaths of all kinds or when comparing results of accidents of different kinds, such as train and motor vehicle.

12.—Persons Killed or Injured on Railways, by Specified Cause, 1965-67

Item	1965		1966		1967	
	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.
ACCIDENTS RESULTING FROM MOVEMENT OF TRAINS, LOCO- MOTIVES OR CARS						
Class of Person—						
Passengers.....	2	273	4	216	—	209
Employees.....	20	1,180	20	1,307	23	1,265
Trespassers.....	50	53	75	47	56	54
Non-trespassers.....	157	557	205	540	192	461
Postal clerks, expressmen, etc.....	—	14	1	4	—	19
Totals.....	229	2,077	305	2,114	271	2,008
Description of Accidents (employees and passengers only)—						
Coupling and uncoupling.....	1	56	1	56	—	58
Collisions.....	6	94	8	68	8	141
Derailments.....	2	143	1	43	1	22
Falling from trains or cars.....	2	42	5	70	3	57
Getting on or off trains.....	2	310	1	357	1	280
Struck by trains, etc.....	4	18	4	15	9	18
Other causes.....	5	790	4	914	1	898
Totals.....	22	1,453	24	1,523	23	1,474
ALL OTHER ACCIDENTS						
Class of Person—						
Employees.....	15	2,332	6	2,537	10	2,597
Passengers.....	—	57	—	39	—	95
Others.....	1	73	2	71	1	58
Totals.....	16	2,462	8	2,647	11	2,750

PART II.—ROAD TRANSPORT*

Highways and motor vehicles are herein treated as related features of transportation. An introductory Section summarizes provincial regulations regarding motor vehicles and motor traffic.

Section 1.—Provincial Motor Vehicle and Traffic Regulations†

NOTE.—It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at pp. 816-817.

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized as follows.

Operators' Licences.—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests. Such licence is renewable annually in Saskatchewan and in the Yukon Territory and the Northwest Territories; in Alberta and British Columbia it is renewable every five years; in New Brunswick and Manitoba it is renewable every two years; in Quebec operator and chauffeur permits expire on the holder's birthday in the odd-numbered year following the issue or renewal thereof; in Prince Edward Island it is renewable every two years and expires at the end of the licensee's birth month; in Newfoundland and Ontario a licence is

* Except as otherwise indicated, the material in this Part has been revised in the Transportation and Public Utilities Division, Dominion Bureau of Statistics.

† Revised according to information received from the respective provincial authorities concerned.

issued on a three-year basis and expires on the licensee's birth date; and in Nova Scotia a licence is issued on a three-year basis and expires at the end of the licensee's birth month. Special licences are required for chauffeurs in all provinces except Newfoundland. In most provinces, a motorcycle operator is required to pass a special examination and have his driver's licence endorsed authorizing him to operate such vehicle or, if he has no driver's licence, he may be issued a licence to operate only this class of vehicle. In Alberta a person under 16 but not under 14 years of age may be issued a licence to operate a scooter, which is defined as a motor vehicle with a speed limit not exceeding 30 miles an hour.

Motor Vehicle Regulations.—All motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the rear of the vehicle (one only for the rear of trailers; in New Brunswick two licence plates are issued for all vehicles other than commercial tractors, trailers and motorcycles; in Prince Edward Island, Quebec, Manitoba and Alberta, one plate is issued for motorcycles, to be mounted on the rear; in Saskatchewan, motorcycles and snowmobiles carry one plate on the rear and truck tractors carry one plate on the front).

In most provinces, in event of sale the registration plates stay with the vehicle but in Quebec, Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia, vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exemption from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is three months; in Ontario where it is six months for vehicles from other provinces and three months for vehicles registered outside Canada; in Manitoba where residents may use registration plates from other jurisdictions for 90 days and visitors are exempt from registration provided the vehicle is not used for business purposes; in Saskatchewan where an out-of-province student may extend the period of exemption from registration requirements for the whole school year, provided the vehicle is properly registered in its home jurisdiction; in Alberta where non-residents may operate vehicles currently registered in their home province or state of the United States for a period not exceeding six months and in British Columbia where it is one month or six months for tourists). Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device. In Ontario, under a 1968 amendment to the Highway Traffic Act, a certificate of roadworthiness is required for a vehicle sold on the second-hand market before a permit is issued for its operation.

Traffic Regulations.—In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, Quebec and Yukon Territory (unless otherwise posted) is 60 miles an hour in daytime and 55 at night; in Manitoba, the basic speed limit is 60 miles an hour in daytime and 50 at night unless otherwise posted—speed limits may be raised to 70 miles an hour or modified in semi-built-up areas; in Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highway where higher speeds may be posted; in Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour except where 65 miles an hour is authorized; in New Brunswick maximum speeds vary from 50 to 60 miles an hour depending on type of highway; and in Ontario maximum speeds vary from 50 to 70 miles an hour, depending on type of highway. In the other provinces the maximum speed permitted is normally 50 miles an hour; in Saskatchewan and British Columbia where higher speeds are in effect they are posted. In the Northwest Territories, the highway limit is 60 miles an hour for all vehicles, day or night, except as otherwise posted, and in municipalities it is 30 miles an hour except as posted. Slower speeds are required in cities, towns and villages (in Nova Scotia and British Columbia when passing schools and public playgrounds), at road intersections, railway crossings or at other

places or times where the view of the highway for a safe distance ahead is in any way obscured. In most provinces, truck speed limits are at least five miles an hour below automobile speed limits, although in Manitoba and Saskatchewan they are the same as for passenger vehicles. In all provinces and territories, accidents resulting in personal injury or property damage in excess of \$100 must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to a police officer or to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Driver Licensing Controls.—All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of licence or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

Safety Responsibility Legislation.—Each province has enacted safety responsibility legislation (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle registration of a person convicted of a serious offence (impaired driving, driving under suspension, dangerous driving, etc.). It also provides for the automatic suspension of a person's driving licence and registration of the owner whose uninsured vehicle is involved directly or indirectly in an accident resulting in damage in excess of \$100 or injury or death to any person (in Alberta the amount is \$200). In Saskatchewan and Alberta, if a Judgment is rendered for damages against the driver or owner, the driver's licence and registration remain suspended until the Judgment is satisfied and proof of financial responsibility for the future is filed. In British Columbia proof of financial responsibility for the future is not required if suspension is for accident only. In Saskatchewan, the Yukon Territory and the Northwest Territories uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of \$100 (\$200 in Saskatchewan). In the Province of Quebec, pursuant to the Code of Civil Procedure, the plaintiff may seize before Judgment the motor vehicle which has caused him damage whatever the amount of property damage whether covered for third-party insurance or not. In Ontario, Manitoba and Alberta, the non-resident motorist is not required to carry or produce any form of proof of insurance. In Manitoba, proof of insurance must be supplied at the time of registration but if such insurance expires or is cancelled registration of the vehicle is not suspended unless the vehicle is involved in an accident.

In the Yukon Territory and the Northwest Territories, proof of insurance must be supplied before vehicle licence is issued, and when the insurance expires or is cancelled vehicle licence plates must be returned to the Registrar of Motor Vehicles. By order, the Northwest Territories Commissioner may exempt certain areas from the insurance requirement.

Unsatisfied Judgment Fund.—Legislation has been enacted in all provinces except Saskatchewan, and in the Yukon Territory, usually in the form of an amendment to the motor vehicle laws of the province or territory, providing for the establishment of a fund, frequently called an Unsatisfied Judgment Fund (in New Brunswick, the Unsatisfied Judgment Fee; in Ontario, the Motor Vehicle Accident Claims Act; in Alberta, the Motor Vehicle Accident Claims Fund; and in British Columbia, the Traffic Victims' Indemnity Fund), out of which are paid Judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan where insurance is compulsory, the funds are obtained by the annual collection of a fee from the registered owner of every motor vehicle or from every person to whom a

driver's licence is issued. The fee usually does not exceed \$1 per annum; in New Brunswick the fee is \$3 a year; in Ontario a fee of \$25 is paid by the uninsured motorist (in the absence of the fee being paid the uninsured, if apprehended, is liable to a fine) and, in addition, the fund is subsidized by a \$1 annual charge from each licensed driver; in Alberta \$20 is collected from each uninsured owner of a motor vehicle at the time of registration or transfer; and Manitoba collects an additional \$25 from each uninsured owner at the time of registration.

A feature of this legislation, which is contained in some provincial statutes, is the provision for the payment of Judgments in hit-and-run accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland and the Administrator of the Motor Vehicle Accident Claims Fund in Alberta); any Judgment secured against the responsible authority is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one Judgment. In Newfoundland and Nova Scotia, the limits are \$10,000 for one person, \$20,000 for two or more persons injured in one accident and \$5,000 for property damage. In Nova Scotia and New Brunswick, the limit is \$35,000 in respect of any one accident. In Prince Edward Island and Quebec, the limit is \$35,000 for all damages in the same accident, subject to a deduction of \$200 from all damage to the property of others; damages resulting in bodily injury or death are, up to \$30,000, payable by priority over damages to property and the latter are, up to \$5,000, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In British Columbia, the limit is based on the single amount of \$50,000 for any one accident with the provision that not more than \$5,000 may be paid on a property damage claim until injury claims up to \$45,000 have been satisfied; the \$35,000 limit exists for hit-and-run accidents but does not apply to payments for property damage. In Alberta, the limit is \$35,000 for death or personal injury to one or more persons and \$5,000 for damage to property, subject to a limit of \$35,000 in any one accident; where in one accident claims result from bodily injury to or death of one or more persons and loss of or damage to property, claims arising out of bodily injury or death have priority over claims arising out of loss of or damage to property to the amount of \$30,000, and claims arising out of loss of or damage to property have priority over claims arising out of bodily injury or death to the amount of \$5,000, subject to a deduction of \$50. In Manitoba, the limit based on one accident is \$35,000, with Judgments arising out of bodily injury or death having priority to the extent of \$30,000 over claims resulting from loss of or damage to property; and Judgments arising out of loss of or damage to property having priority to the extent of \$5,000 over Judgments resulting from bodily injury or death; the maximum amount payable for a single Judgment resulting from loss of or damage to property is \$3,000, subject to a deduction of \$200.

In Ontario, the Motor Vehicle Accident Claims Act passed in 1962 replaced the Unsatisfied Judgment Fund which had been in effect since 1947. The new Act was streamlined to adjust promptly and efficiently all those claims incurred by the uninsured motorist. Claims could be adjusted much the same as by the insurance companies. The limits under the Act are \$35,000, inclusive of \$5,000 for any property damage claim. Many small claims are handled by the Ontario Department of Transport, subject to a \$50 franchise clause in respect to property damage, but the procedure is such that claims can be settled under Sect. 5 of the Act without resort to litigation. Sect. 6 covers Judgment cases and Sects. 11 and 14 cover the hit-and-run cases in which a Judgment is necessary and property damage is not payable.

Sources of information on provincial motor vehicle and traffic regulations:—

Newfoundland

Administration.—The Minister of Finance, St. John's.

Legislation.—The Highway Traffic Act, 1962 (amended 1964).

Prince Edward Island

Administration.—The Provincial Secretary, Charlottetown.

Legislation.—The Highway Traffic Act (SPEI 1964, c. 14).

Nova Scotia

Administration.—Registry of Motor Vehicles, Department of Highways, Halifax.

Legislation.—The Motor Vehicle Act (SNS 1967, c. 191, as amended) and the Motor Carrier Act (1967, c. 190, as amended).

New Brunswick

Administration.—Motor Vehicle Branch, Department of Provincial Secretary, Fredericton.

Legislation.—The Motor Vehicle Act (RSNB 1955, as amended).

Quebec

Administration.—Motor Vehicle Bureau, Department of Transport and Communications, Parliament Bldgs., Quebec.

Legislation.—The Highway Code (RSQ 1964, c. 231, as amended) and the Highway Victims Indemnity Act (RSQ 1964, c. 232).

Ontario

Administration.—Ontario Department of Transport, Toronto.

Legislation.—The Highway Traffic Act (RSO 1960, c. 172, as amended), the Public Vehicles Act (RSO 1960, c. 337, as amended), the Public Commercial Vehicles Act (RSO 1960, c. 319, as amended), and the Motor Vehicle Accident Claims Act (SO 1961-62, c. 84, as amended).

Manitoba

Administration.—Minister, Department of Transportation, Winnipeg.

Legislation.—The Highway Traffic Act (SM 1966, c. 29) and The Unsatisfied Judgment Fund Act (SM 1965, c. 89).

Saskatchewan

Administration.—Highway Traffic Board, Saskatchewan Power Bldg., Regina.

Legislation.—The Vehicles Act, 1965.

Alberta

Administration and Legislation.—The Motor Vehicle Accident Claims Act (SA 1964, c. 56) and the Highway Traffic Act (SA 1967, c. 30) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

British Columbia

Administration and Legislation.—Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

Yukon Territory

Administration.—Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.

Legislation.—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77, as amended).

Northwest Territories

Administration.—Commissioner of the Northwest Territories, Yellowknife, N.W.T.

Legislation.—The Vehicles Ordinance (1967, c. 9, second session).

Section 2.—Highways, Roads and Streets

Highways and Roads.—The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1967 the reported mileage of highways and rural roads was 449,561 miles, a figure that includes all roads under provincial jurisdiction, federal roads and local roads under municipal jurisdiction other than the roads and streets in census metropolitan areas and urban centres of more than 1,000 population. Mileage for the latter is given separately under the heading of "Urban Streets".

1.—Highway and Rural Road Mileage classified by Type and by Province, 1967

Province or Territory	Surfaced			Earth miles	Total miles
	Rigid Pavement	Flexible Pavement	Gravel		
	miles	miles	miles		
Newfoundland.....	—	1,122	4,110	866	6,098
Prince Edward Island.....	525	850	1,212	658	3,275
Nova Scotia.....	3	4,231	4,711	6,518	15,463
New Brunswick.....	—	1,903	11,323	14	13,240
Quebec.....	14,368	1,153	30,876	9,475	55,872
Ontario.....	1,342	19,743	51,159	3,548	75,792
Manitoba.....	282	2,856	28,161	13,204	44,503
Saskatchewan ¹	3	5,256	54,852	66,539	126,649 ²
Alberta.....	43	5,518	57,895	13,262	76,718
British Columbia.....	15	7,097	14,740	7,098	28,950
Yukon and Northwest Territories.....	2	5	2,903	91	3,001
Canada.....	16,582²	49,764	261,942	121,273	449,561

¹ Includes road allowances.

² Not the exact sum of the above items, due to rounding.

Expenditure on highways and rural roads in the year ended Mar. 31, 1968, totalled \$1,350,841,000, an amount 3.0 p.c. lower than that for the previous fiscal year; construction expenditures decreased by 7.7 p.c. and maintenance costs rose by 8.0 p.c.

2.—Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1967 and 1968

Item and Province or Territory	1967	1968	Item and Province or Territory	1967	1968
	\$'000	\$'000		\$'000	\$'000
Construction.....	983,688	908,399	Administration and General¹....	75,525	82,313
Newfoundland.....	26,248	33,206	Newfoundland.....	754	929
Prince Edward Island.....	10,629	10,407	Prince Edward Island.....	352	422
Nova Scotia.....	44,993	43,797	Nova Scotia.....	2,471	2,930
New Brunswick.....	36,988	49,367	New Brunswick.....	2,428	2,739
Quebec.....	298,913	191,628	Quebec.....	10,270	9,664
Ontario.....	264,987	287,383	Ontario.....	42,528	50,268
Manitoba.....	39,039	30,102	Manitoba.....	2,838	3,911
Saskatchewan.....	78,976	82,783	Saskatchewan.....	5,739	3,768
Alberta.....	86,098	79,811	Alberta.....	968	957
British Columbia.....	87,344	85,786	British Columbia.....	5,953	5,669
Yukon and Northwest Terri- tories.....	9,473	14,129	Yukon and Northwest Terri- tories.....	1,054	1,056
Maintenance.....	333,430	360,129	Totals.....	1,392,643	1,350,841
Newfoundland.....	11,607	13,188			
Prince Edward Island.....	3,497	3,856			
Nova Scotia.....	16,921	16,638			
New Brunswick.....	13,940	15,275			
Quebec.....	89,014	96,599			
Ontario.....	94,104	102,498			
Manitoba.....	11,790	12,763			
Saskatchewan.....	13,386	16,555			
Alberta.....	29,205	31,888			
British Columbia.....	40,841	41,697			
Yukon and Northwest Terri- tories.....	9,626	9,172			
			Distribution of Expenditure—		
			Federal.....	179,402	152,267
			Provincial.....	1,101,055	1,064,755
			Municipal.....	106,752	122,728
			Other.....	5,433	11,091

¹ Includes federal administrative costs re Trans-Canada Highway amounting to \$170,000 in 1966-67 and \$276,000 in 1967-68.

*Reminiscent of earlier days, traffic
on country roads is not always on
wheels.*



Multiple expressways carry heavy traffic in the Toronto and other densely populated areas and, despite the problems created by long distances between centres and by a climate that adds to the difficulties of construction and maintenance, motor vehicles are everywhere served by good highways and roads.



Federal-Provincial Road Assistance Programs.—There are various programs existing between the Federal Government and the provinces relating to highway and road construction, the co-ordination of which is the responsibility of the federal Minister of Transport who reports to Parliament on federal road policy. When major programs of assistance have been decided upon, their implementation is undertaken either by the Department of Public Works or by the sponsoring Department.

The Trans-Canada Highway.—The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with data on specifications and route across the participating provinces, in the 1951 Year Book, pp. 631-634. Construction progress and changes in legislation are reported in subsequent editions.

Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces. Construction standards were set and the date of completion fixed. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces, and those sections within the National Parks were to be the responsibility of the Federal Government. Later amendments to the Act increased the extent of federal financial participation and extended the period in which construction costs might be incurred under the Act to Dec. 31, 1970.

Although construction was still going on in a number of sections, the closing in 1962 of the last major gap—in the Rocky Mountains—made it possible for the first time to drive the entire length of the 4,827-mile route.* The Trans-Canada Highway was officially opened on Sept. 3, 1962. Provincial mileages are approximately as follows: Newfoundland, 510; Prince Edward Island, 71; Nova Scotia, 300; New Brunswick, 385; Quebec, 388; Ontario, 1,453; Manitoba, 309; Saskatchewan, 406; Alberta, 282; and British Columbia, 552. Length through the National Parks totals 140 miles.

Up to Mar. 31, 1968, contractual commitments for new construction on the Highway amounted to \$1,157,201,448, of which the federal share was \$785,723,042. Federal payments to the provinces for prior, interim and new construction totalled \$718,536,463. Paving to specified standards had been completed over a distance of 4,728 miles and 841 bridges, overpasses and other structures of more than 20-foot span had been or were being constructed.

Northern Roads.—In the past decade it has become increasingly apparent that if Canada is to benefit from supplying a large part of the world's increasing demands for minerals, a well-planned road network in the Yukon and Northwest Territories is imperative. In 1965, after thorough planning and detailed research, the Federal Government announced the Northern Road Network Program, calling for the construction of roads in the Territories to cost \$10,000,000 a year for a 10-year period. This period, in turn, is part of a 20-year plan intended to bring all resource-potential areas covered by the Program within 200 miles of the nearest permanent road. This will gradually reduce the dependence of the North on seasonal transportation for bulk shipments, reduce the cost of holding large inventories and, as the program progresses, bring the cost of living in northern communities more in line with that in other parts of Canada and also stimulate the growth of the tourist industry.

Types of roads and the proportion of federal assistance under the Program are as follows:—

Communication and Network Roads—highways, major roads and secondary and local roads to provide a primary network in the Territories, including trunk highways, secondary trunk roads and airport roads; construction and 85 p.c. of maintenance costs will be paid by the Federal Government.

Tote Trails—low-standard roads to provide temporary, seasonal or year-round access to the property of a company exploring or developing a natural resource; up to 50 p.c. or \$20,000 of the cost may be contributed by the Territory concerned.

* The total given in the 1968 Year Book was 4,860 miles. Variations in length of route from year to year are caused by straightening sections or by-passing built-up areas.

Initial Access Roads—low-standard roads to provide the same service as Tote Trails but where the contribution under the Tote Trail category would be insufficient because of length of road or difficulty of terrain; federal assistance may be up to 50 p.c. of the cost or 5 p.c. of expenditures on the exploration or development project.

Permanent Access Roads—from the nearest permanent road to the location of a resource development that has been brought to the preproduction stage; federal assistance may be up to but not exceed (a) 66⅔ p.c. of the total cost, (b) 15 p.c. of the capital invested by the company before start of production, or (c) \$40,000 per mile, whichever is the least.

Resource Development Roads—leading from the nearest permanent area in which two or more resource projects have reached the production stage; all construction costs are to be paid by the Federal Government but expenditures will not be undertaken unless it is proven that the projects to which the road leads can be operated commercially for many years.

Area Development Roads—low-standard roads into or through an undeveloped region of favourable natural resource potential; construction is the responsibility of the Federal Government.

Roads to Public Airports (land or water)—to connect airports with the nearest road network or local road; construction and 85 p.c. of maintenance will be paid by the Federal Government.

In the Yukon Territory under this Program, approximately 1,215 miles of roads constructed at a cost of about \$39,000,000 were in use in 1967-68. In the Northwest Territories about 707 miles of roads (excluding service roads in Wood Buffalo National Park) built at a cost of about \$37,000,000 were in use by March 1968. As new roads are built, roads built earlier to service mines (now worked out) are abandoned. Work progressed on the extension to the Mackenzie Highway to Fort Simpson; approximately 30 miles of a 62-mile contract let in 1967 were completed by the end of 1968 and a 67-mile contract to be let in early 1969 should complete the highway to Fort Simpson by 1970. A smaller road system exists in the Fort Smith area, including the Fitzgerald-Bell Rock portage road and the park administrative roads in Wood Buffalo National Park. Total length of this road system is 274 miles.

In the Yukon Territory, a 142-mile area development road from Ross River to Carmacks was open to traffic in late 1968. In addition to opening up a potentially rich resource area, this road is of special interest to tourists since it provides a route from Watson Lake on the Alaska Highway to and through Carmacks and Dawson, and onward to the Alaska border where it connects with the State of Alaska Highway System. Recently, the Federal Government has agreed to improve existing routes or build new routes to tidewater at either Haines or Skagway in the Alaska Panhandle, a distance of almost 400 miles, to facilitate shipment of lead-zinc concentrates to Japan. Surveying is under way on the extension of the Dempster Highway in the Yukon Territory; 78 miles of this route to Fort McPherson in the Northwest Territories are in use.

Construction and Improvement of Trunk Highways in the Atlantic Provinces.—This program was started in 1964 with a commitment of \$10,000,000 from the Atlantic Development Fund, to be allocated on the basis of \$3,000,000 to each of Nova Scotia, New Brunswick and Newfoundland and \$1,000,000 to Prince Edward Island. In 1965 and 1967 the Federal Government approved special appropriations of \$30,000,000 and \$25,000,000 to the Atlantic Development Board, with the same 3-3-3-1 allocation to obtain. Expenditures approved and funds disbursed by the Board under the program up to Mar. 31, 1968, were \$65,000,000 and \$39,600,000, respectively.

Urban Streets.—Information on urban streets is obtained from the local administrations of all areas with populations of over 1,000, all areas located within census metropolitan areas, improvement districts with over 1,000 population and rural municipalities with over 15,000 population. Brief statistical data are given in Table 3; more detail may be obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue No. 53-201).

3.—Statistics of Urban Streets, 1965-67

Item		1965	1966 ^r	1967
Total Expenditure Reported¹.....	\$'000	329,308	378,692	443,677
New construction.....	"	165,738	202,685	233,721
Reconstruction, repair, cleaning, sanding, snow removal, administration, etc.....	"	163,570	176,007	209,956
Total Urban Mileage.....	No.	44,312	44,930	45,988
Rigid pavement.....	"	7,073	7,374	6,697
Flexible pavement.....	"	20,832	21,640	23,555
Gravel and other surfaces.....	"	14,370	14,258	13,978
Earth.....	"	2,037	1,658	1,758

¹ Includes expenditures on sidewalks, footpaths, bridges and ferries.

Section 3.—Motor Vehicles

Motor Vehicle Registrations.—Registrations continue to increase year by year, a record of 7,495,203 being reached in 1967. Of that total, 5,876,691 were passenger cars—one for every 3.5 persons. Registrations by province are given in Table 4 and types of vehicles registered by province in Table 5.

4.—Motor Vehicles Registered, by Province, 1958-67

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures from 1904 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1958.....	51,575	25,504	164,954	121,715	968,058	1,868,922	256,064	314,423	430,081	515,244	4,723,825
1959.....	51,145	27,502	189,435	129,629	1,040,366	1,973,737	269,974	326,690	456,458	545,491	5,017,686
1960.....	61,952	30,147	187,065	138,469	1,096,053	2,062,484	285,689	335,148	486,370	564,351	5,256,341
1961.....	65,270	32,166	206,691	145,951	1,183,978	2,126,270	299,998	349,817	509,298	588,280	5,517,023
1962.....	74,119	33,888	206,370	151,360	1,281,180	2,177,148	312,272	372,219	535,459	620,426	5,774,810
1963.....	79,422	35,314	212,034	156,768	1,381,801	2,268,320	324,806	382,190	560,490	662,453	6,074,655
1964.....	87,990	35,062	222,827	165,311	1,441,201	2,381,219	339,509	396,742	583,713	716,644	6,382,033
1965.....	92,885	33,849	233,653	174,428	1,480,743	2,516,680	342,335	418,606	606,754	786,310	6,698,778
1966.....	95,704	35,299	234,532	183,676	1,556,342	2,643,474	356,693	438,558	638,852	838,992	7,035,261
1967.....	100,322	36,844	246,384	188,617	1,769,154	2,736,366	371,077	467,495	676,270	887,736	7,495,203

¹ Includes registrations in the Yukon and Northwest Territories; in 1967 they numbered 8,583 and 6,355, respectively.

5.—Types of Motor Vehicles Registered, by Province, 1966 and 1967

Year and Province or Territory	Passenger Cars ¹	Commercial Cars, Trucks, etc. ²	Buses	Motor-cycles	Total
	No.	No.	No.	No.	No.
1966					
Newfoundland.....	71,839	22,520	600	745	95,704
Prince Edward Island.....	26,689	8,140	10	460	35,299
Nova Scotia.....	174,380	55,168	1,316	3,668	234,532
New Brunswick.....	144,900	34,523	778	3,475	183,676
Quebec.....	1,168,073 [†]	351,204 [†]	12,080	24,985	1,556,342
Ontario.....	2,235,489	360,719	9,307	37,959	2,643,474
Manitoba.....	270,175	81,454	242	4,822	356,693
Saskatchewan.....	272,740	157,646	3,813	4,350	438,558
Alberta.....	445,195	177,610	4,432	11,615	638,852
British Columbia.....	664,791	158,814	3	15,387	838,992
Yukon and Northwest Territories.....	6,444	6,131	96	468	13,139
Canada, 1966.....	5,480,724[†]	1,413,929[†]	32,674	107,934	7,035,261
1967					
Newfoundland.....	75,138	23,707	510	967	100,322
Prince Edward Island.....	27,634	8,389	190	631	36,844
Nova Scotia.....	187,765	52,944	1,414	4,261	246,384
New Brunswick.....	149,723	34,024	989	3,881	189,617
Quebec.....	1,370,514	351,960	13,409	33,271	1,769,154
Ontario.....	2,312,344	370,783	10,298	42,941	2,736,366
Manitoba.....	280,480	85,188	273	5,136	371,077
Saskatchewan.....	293,327	166,343	3,991	3,834	467,495
Alberta.....	470,143	188,678	4,550	12,899	676,270
British Columbia.....	702,003	168,504	3	17,229	887,736
Yukon and Northwest Territories.....	7,620	6,632	86	600	14,938
Canada, 1967.....	5,876,691	1,457,152	35,710	125,650	7,495,203

¹ Includes taxis.² Includes service cars, road tractors, farm tractors, etc.³ Included with trucks.

Apparent Supply of Automobiles.—The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XXI on Domestic Trade and Prices.

6.—Apparent Supply of New Automobiles, 1958-67

Year	Cars Made for Sale in Canada		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial	Passenger	Commercial
	No.	No.	No.	No.	No.	No.	No.	No.
1958.....	280,677	55,908	104,195	9,182	190	8	384,682	65,082
1959.....	285,841	63,429	153,932	11,632	549	6	439,224	75,055
1960.....	307,499	66,293	170,653	9,376	179	56	477,973	75,613
1961.....	312,599	60,332	106,865	9,487	700	35	418,764	69,784
1962.....	412,120	78,094	94,655	4,413	194	67	506,581	82,440
1963.....	513,785	93,912	59,634	3,193	391	38	573,028	97,067
1964.....	520,743	104,446	92,490	3,160	1,277	17	611,956	107,589
1965.....	636,738	119,917	136,446	6,675	1,192	41	771,992	126,551
1966.....	508,111	114,211	188,667	16,172	379	45	694,399	130,338
1967.....	365,521	98,950	313,692	32,100	745	59	678,468	130,991

Provincial Government Revenue from Motor Vehicles.—The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government revenue. In every province, licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1967 the average cost per motor vehicle for operating taxes and licences was about \$141.

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Motive fuel tax rates are given in the Public Finance Chapter, Section 2, Subsection 2 on Provincial Taxes; Federal Government revenue from excise and sales taxes is given in the same Chapter, Section 3, Subsection 3 on Revenue from Taxation.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1967 and 1968

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and Other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences ¹	Public Service Vehicle Tax	Motive Fuel Taxes	Total ²
	\$	\$	\$	\$	\$	\$	\$
1966-67							
Newfoundland.....	1,368,201	1,889,253	7,490	464,409	357	13,605,198	17,880,946
Prince Edward Island	498,558	391,088	1,736	96,595	700	3,938,519	4,989,998
Nova Scotia.....	3,434,937	3,309,386	2	508,376	136,440	27,176,133	35,226,108
New Brunswick.....	3,367,985	2,902,869	20,853	439,457	—	22,136,452	29,363,260
Quebec.....	27,099,294	29,789,094	99,940	2,729,072	1,905,539	199,617,461	263,409,566
Ontario.....	44,564,068	41,780,333	385,312	4,521,629	4,816,421	284,580,901	386,247,008
Manitoba.....	5,531,745	4,625,497	25,145	195,883	1,459,564	40,443,238	53,121,652
Saskatchewan.....	3,923,143	4,345,928	4	537,588	—	34,133,488	45,083,721
Alberta.....	6,672,636	9,524,604	2	934,126	239,729	46,081,572	64,982,850
British Columbia.....	13,005,087	10,998,294	70,626	1,601,272	384,474	61,158,463	88,539,650
Yukon and N.W.T.....	81,868	95,939	1,371	31,296	92,147	889,598	1,254,493
Canada, 1966-67	109,547,522	110,632,285	612,473³	12,059,703	9,035,371⁴	733,711,023	990,099,252
1967-68							
Newfoundland.....	1,505,021	2,078,177	8,871	479,580	347	13,925,000	18,736,106
Prince Edward Island	518,518	373,760	2,366	119,735	1,000	4,046,480	5,130,667
Nova Scotia.....	3,540,458	3,570,953	2	685,827	142,352	28,439,134	37,057,211
New Brunswick.....	3,501,675	3,054,200	23,288	449,214	—	24,117,141	31,723,294
Quebec.....	29,057,372	31,462,980	133,084	7,235,739	1,966,586	214,796,146	287,063,996
Ontario.....	46,401,341	45,566,614	449,304	3,946,209	4,812,931	304,741,335	411,859,457
Manitoba.....	5,754,868	4,934,948	27,374	2,284,890	1,603,748	39,982,341	55,529,453
Saskatchewan.....	4,088,202	5,453,431	4	614,607	—	35,975,213	47,346,638
Alberta.....	7,117,072	10,080,305	2	1,632,417	278,830	49,463,686	70,230,783
British Columbia.....	13,728,244	11,667,004	78,526	1,189,905	401,910	65,080,043	94,159,553
Yukon and N.W.T.....	90,947	110,262	1,691	32,167	101,310	1,246,473	1,665,827
Canada, 1967-68	115,303,718	118,352,634	724,504⁵	18,670,290	9,309,014⁶	781,812,992	1,060,522,985

¹ Operators' licences are issued for different periods in different provinces; see p. 813 for provincial regulations.

² Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws.

³ Included with other motor vehicles.

⁴ Included with miscellaneous revenues and therefore in total.

⁵ Included with passenger automobiles.

⁶ Not complete.

Sales of Motive Fuels.—In order to estimate the total amount of motive fuel purchased in Canada for use in motor vehicles on public streets and highways, it has been necessary to eliminate from the total the amount of motive fuel used for other purposes. Thus, from the total or gross sales, including imports and exports, the following are subtracted to obtain net sales: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds were paid. Net sales are thus defined as sales on which a tax or taxes have been paid in full and are considered to approximate the actual amount of motive fuel purchased in Canada for use on public streets and highways. As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.9 p.c. in 1967 and net sales of diesel oil 6.1 p.c.

8.—Sales of Motive Fuels, by Province, 1963-67

Province or Territory	1963	1964	1965	1966	1967
GASOLINE AND LIQUEFIED PETROLEUM GASES					
	gal.	gal.	gal.	gal.	gal.
Newfoundland.....	46,158,513	51,205,828	59,214,001	64,865,831	68,156,858
Prince Edward Island.....	19,687,378	20,753,975	21,625,345	23,912,161	23,979,138
Nova Scotia.....	122,355,774	129,977,561	136,170,762	145,158,633	150,583,472
New Brunswick.....	92,485,963	99,370,660	107,558,514	115,280,161	123,489,832
Quebec.....	899,756,445	938,822,568	1,060,362,285	1,144,022,116	1,200,647,032
Ontario.....	1,477,127,028	1,594,284,345	1,673,758,797	1,769,013,364	1,852,182,953
Manitoba.....	222,604,138	225,783,740	232,410,160	241,251,953	247,161,278
Saskatchewan.....	314,940,380	318,863,410	351,479,362	370,163,766	368,955,997
Alberta.....	422,082,129	439,543,671	457,092,775	481,041,874	497,666,777
British Columbia.....	380,461,856	422,975,317	441,806,409	492,890,837	534,953,600
Yukon and N.W.T.....	7,764,476	8,478,347	8,739,575	9,742,704	11,130,271
Totals, Gross Sales.....	4,005,424,050	4,250,059,422	4,550,217,985	4,857,343,490	5,078,907,208
Refunds and exemptions.....	565,077,175	548,683,750	560,903,911	594,886,008	607,709,492
Totals, Net Sales.....	3,440,346,905	3,701,375,672	3,989,314,074	4,262,457,482	4,471,197,716
DIESEL OIL					
	gal.	gal.	gal.	gal.	gal.
Totals, Net Sales.....	193,180,457	210,642,160	259,943,441	299,359,896	317,758,198

Motor Carriers—Freight.*—Statistics of the common carrier segment of the intercity and rural motor carrier industry have been collected on a continuing basis since 1941. Statistics of contract carriers are available from 1958.

* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight*, Part I (Catalogue No. 53-222) and Part II (Catalogue No. 53-223).

9.—Summary Statistics of Motor Carriers—Freight, 1965 and 1966

Item	Common		Contract	
	1965	1966	1965	1966
Carriers Reporting..... No.	2,885	2,637	1,448	1,520
Property Account—Fixed Assets (Motor carrier business)..... \$	380,095,350	411,057,346	103,750,118	115,944,337
Operating Revenues..... \$	546,581,495	595,870,017	121,712,591	136,116,879
Freight—				
Intercity and rural..... \$	524,404,233	566,412,129	115,546,480	126,521,352
Local..... \$	8,456,888	11,552,579	3,290,193	6,388,430
Other..... \$	13,720,374	17,905,309	2,875,918	3,207,097
Operating Expenses..... \$	517,034,003	566,114,366	111,421,833	127,024,166
Maintenance..... \$	67,070,082	72,673,623	19,022,228	23,045,112
Wages of drivers and helpers..... \$	106,523,338	119,887,920	25,283,272	29,481,681
Other (fuel, insurance, fuel taxes, rents, depreciation and purchased transportation)..... \$	208,451,378	220,535,241	47,268,477	52,710,396
Licence expense..... \$	16,489,501	17,860,159	3,665,974	4,084,961
Administration and general..... \$	118,499,704	135,157,423	16,181,882	17,702,016
Net Operating Revenues..... \$	29,547,492	29,755,651	10,290,758	9,092,713
Fuel Consumed—				
Gasoline..... '000 gal.	96,217	94,668	28,584	28,219
Diesel oil..... "	52,278	56,784	12,927	13,653
Liquefied petroleum gases..... "	134	125	104	69

9.—Summary Statistics of Motor Carriers—Freight, 1965 and 1966—concluded

Item	Common		Contract	
	1965	1966	1965	1966
Employees—				
Average employed during year..... No.	35,262	38,525	6,761	7,281
Total salaries and wages..... \$	186,760,947	210,204,354	35,147,810	39,687,237
Working proprietors..... No.	1,966	1,778	1,037	1,021
Withdrawals of working proprietors..... \$	6,963,882	7,923,412	5,073,679	5,731,562
Equipment—				
Trucks with gasoline engines..... No.	12,977	12,164	3,716	5,570
Trucks with diesel engines.....	362	582	342	383
Road tractors with gasoline engines.....	8,022	8,514	1,724	1,913
Road tractors with diesel engines.....	4,794	5,292	1,091	1,226
Semi-trailers.....	21,505	20,760	3,522	4,362
Trailers.....	1,933	3,812	534	863

Household Goods Movers and Storage Operators.*—Statistics of household goods movers and storage operators, summarized in Table 10, were first presented separately in 1960; before that date, they were included either with motor carriers—freight or with warehousing, depending upon the predominant source of operating revenues of the companies concerned.

* Statistics are given in more detail in DBS annual report *Moving and Storage, Household Goods* (Catalogue No. 53-221).

10.—Summary Statistics of Household Goods Movers and Storage Operators, 1962-66

Item	1962	1963	1964	1965	1966
Companies Reporting..... No.	193	227	228	222	246
Investment in Land, Warehouses, Vehicles, etc..... \$	28,861,344	36,529,922	33,828,214	36,677,325	44,415,161
Revenues..... \$	38,482,035	45,860,927	45,565,248	50,829,107	69,010,938
Cartage..... \$	25,980,439	31,052,341	30,532,243	33,405,626	46,260,871
Storage..... \$	5,816,373	6,552,230	5,558,646	6,716,600	8,707,749
Packing..... \$	3,546,449	4,101,846	4,615,712	5,432,317	6,128,807
Other..... \$	3,138,774	4,154,510	4,858,647	5,274,564	7,913,511
Operating Expenses..... \$	36,526,348	44,051,416	43,395,634	47,918,103	65,822,360
Maintenance..... \$	2,835,251	3,224,772	3,206,190	3,412,197	4,907,822
Salaries and wages (charged to operations) \$	10,917,519	13,209,333	13,935,847	16,437,937	21,695,553
Cartage expenses..... \$	2,607,760	3,790,376	3,332,249	3,117,692	5,461,210
Storage expenses..... \$	2,378,406	2,602,250	2,641,829	2,865,304	3,945,071
Other operating expenses..... \$	17,787,412	21,224,685	20,279,519	22,084,973	29,812,704
Net Operating Revenues..... \$	1,955,687	1,809,511	2,169,614	2,911,004	3,188,578
Employees—					
Average employed during year..... No.	4,064	4,790	4,450	4,864	5,927
Salaries and wages..... \$	16,220,976	19,758,876	19,355,843	21,725,734	28,578,027
Storage Capacity—					
Household goods..... cu. ft.	31,217,234	36,303,850	33,888,412	35,333,750	46,616,388
Other.....	5,345,366	9,725,781	7,650,548	12,630,680	15,764,910
Vehicles—					
Trucks..... No.	1,578	1,874	1,718	1,785	2,082
Tractors.....	741	824	797	848	1,037
Semi-trailers.....	780	803	867	898	1,167
Trailers.....	59	169	26	39	61

Passenger Buses.*—The operations of companies predominantly engaged in passenger bus service are summarized in Table 11. Data refer to the for-hire segment of the industry. Only firms engaged in intercity and rural operations and having an annual gross revenue of \$6,000 or over are covered. Operators predominantly involved in the provision of school bus service are not included nor are airport servicing and urban transit bus operators.

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1963-67

NOTE.—Only carriers with an annual gross revenue of \$6,000 or over are included.

Item		1963	1964	1965	1966	1967
Carriers Reporting	No.	166	165	162	158	157
Property Account—Fixed Assets	\$	76,252,205	75,007,987	73,864,251	78,653,611	89,301,064
Revenues	\$	61,236,860	63,170,601	68,841,256	80,429,354	96,017,923
Regular Passenger Service—						
Intercity and rural.....	\$	47,960,347	47,945,483	52,304,349	60,769,147	71,417,039
Urban and suburban.....	\$	879,221	752,507	891,364	1,063,730	881,959
Chartered service.....	\$	6,597,127	7,498,220	8,068,519	10,101,725	14,126,041
Other transportation revenue.....	\$	5,800,165	6,974,391	7,577,024	8,494,752	9,592,884
Operating Expenses	\$	55,725,517	57,782,444	61,737,884	79,170,546	82,381,236
Maintenance.....	\$	11,212,351	11,270,499	11,573,622	12,287,006	14,329,270
Wages and bonuses of drivers and helpers.....	\$	14,624,686	14,875,560	16,343,963	19,522,951	23,326,326
Other transportation expenses.....	\$	11,675,266	11,512,062	12,851,723	14,728,273	17,699,664
Operating taxes and licences.....	\$	4,496,626	4,658,792	4,573,880	5,254,826	6,286,545
Other operating expenses.....	\$	13,716,588	15,465,531	16,394,696	18,377,490	20,739,431
Net Operating Revenues	\$	5,511,343	5,388,157	7,103,372	10,253,808	13,636,687
Traffic and Employees—						
Passengers—						
Regular Routes—						
Intercity and rural.....	No.	48,638,373	46,646,418	45,606,246	49,840,586	51,977,079
Urban and suburban.....	"	5,019,002	4,571,884	4,570,831	4,759,006	4,011,541
Special and chartered service.....	"	6,382,415	6,121,076	6,504,733	9,053,905	11,133,244
Bus Miles—						
Regular Routes—						
Intercity and rural.....	No.	93,443,880	94,124,250	90,704,870	107,560,495	122,270,117
Urban and suburban.....	"	1,881,933	1,712,294	2,062,317	2,783,341	2,335,233
Special and chartered service.....	"	11,385,383	12,009,902	12,203,870	14,749,766	18,351,327
Gasoline consumed.....	gal.	4,134,529	3,703,651	3,677,222	3,551,898	3,332,326
Diesel oil consumed.....	"	10,328,872	9,312,916	11,040,793	13,204,813	16,531,222
Employees—						
Average employed during year.....	No.	4,724	4,650	4,738	5,192	5,651
Total salaries and wages.....	\$	23,736,153	23,984,134	25,854,643	30,512,856	36,149,606
Working proprietors.....	No.	59	48	53	46	35
Withdrawals of working proprietors.....	\$	140,663	117,859	152,718	197,050	133,872
Equipment—						
Buses.....	No.	2,457	2,513	2,622	2,746	2,906
Gasoline.....	"	1,144	1,089	1,086	1,100	1,011
Diesel.....	"	1,313	1,424	1,536	1,646	1,895

Urban Transit Systems.—The collection of statistical information on urban transit systems has been extensively reorganized in recent years because of major changes made

* Statistics are given in more detail in DBS annual report *Passenger Bus Statistics* (Catalogue No. 53-215).

in the types of vehicles used for mass passenger movement in urban centres. The current series, which was started in 1956, includes operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

12.—Summary Statistics of Urban Transit Systems, 1963-67

Item		1963	1964	1965	1966	1967
Passenger Fares¹	No.	988,147,638	994,239,184	985,164,840	1,036,423,243	1,084,790,597
Motor bus.....	"	665,481,904	690,881,295	678,017,653	706,647,281	701,373,163
Trolley coach.....	"	149,996,752	133,197,665	130,414,263	116,005,602	117,036,832
Streetcar.....	"	125,937,437	122,023,961	124,787,132	96,826,090	86,083,913
Subway car.....	"	36,491,918	38,055,729	41,373,620	104,754,424	169,767,061
Chartered.....	"	9,168,657	9,662,154	10,332,687	9,852,174	11,417,371
Intercity and rural services (all types of vehicles).....	"	1,070,970	418,380	239,485	2,337,672	2,157,257
Vehicle-Miles Run	No.	208,121,107	212,804,909	213,779,503	240,317,620	254,012,165
Motor bus.....	"	142,779,355	150,113,461	152,806,059	166,857,144	168,948,801
Trolley coach.....	"	32,390,625	28,748,408	27,654,912	24,545,355	24,597,530
Streetcar.....	"	20,302,402	20,118,497	19,912,282	14,612,818	13,792,939
Subway car.....	"	8,967,566	9,474,168	9,644,797	30,309,257	40,630,393
Chartered.....	"	2,935,243	3,628,719	3,495,176	3,502,820	5,510,258
Intercity and rural services (all types of vehicles).....	"	745,916	721,656	266,277	490,226	532,644
Fuel Consumed—						
Diesel oil.....	gal.	19,820,960	20,713,770	23,149,602	26,217,292	28,820,610
Gasoline.....	"	9,388,808	8,874,984	7,565,509	6,544,005	5,857,092
Liquid petroleum gases.....	"	313,302	277,333	256,069	246,863	189,366
Passenger Vehicles in Service..	No.	7,509	7,641	7,939	8,483	8,737
Motor bus.....	"	5,432	5,609	5,774	6,103	6,384
Trolley coach.....	"	1,167	1,122	1,096	989	975
Streetcar.....	"	740	740	735	688	675
Subway car.....	"	170	170	334	703	703
Finances—						
Total assets ²	\$	298,479,381	262,078,164	288,415,768	318,872,629	335,141,232
Long-term debt ²	\$	188,892,505	145,993,895	161,536,125	177,127,897	182,564,138
Capital stock and surplus ²	\$	75,679,476	80,824,236	82,276,931	87,980,805	89,711,518
Operating revenues.....	\$	142,451,128	151,851,962	164,054,532	182,551,307	217,835,451
Operating expenses.....	\$	146,280,067	151,389,907	166,745,551	186,873,252	220,189,545
Ratio of expenses to revenues..	p.c.	102.70	99.70	101.64	102.37	101.08
Employees.....	No.	18,182	17,961	18,645	19,694	20,814
Salaries and wages.....	\$	90,839,804	95,759,397	106,345,817	121,270,890	135,387,582

¹ Initial revenue passenger fares, excluding transfers.
Authority.

² Excludes British Columbia Hydro and Power

There are two subway systems in operation in Canada; the Toronto subway was officially opened on Mar. 30, 1954 and the Montreal subway went into public use on Oct. 17, 1966.

Motor Vehicle Traffic Accidents.—There were 452,759 motor vehicle traffic accidents reported in 1967 compared with 426,105 in the previous year. Deaths from such accidents continue their upward trend, numbering 5,281 in 1966 and 5,429 in 1967 as against 3,260 in 1957. Statistics for 1967, reported by place of occurrence, are given by province in Table 13 but it should be noted that, although motorists are required by law to report accidents, complete statistics of these accidents are not available for all provinces. According to DBS vital statistics data, reported on a different basis, there were 5,412 deaths from motor vehicle traffic accidents in 1967.

13.—Motor Vehicle Traffic Accidents, by Province, 1967

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Accidents Reported.....	7,116	1,831	14,461	10,918	139,111	145,008	18,848	23,532	41,516	49,750	668	452,759
Fatal.....	73	27	226	203	1,393	1,400	169	219	356	461	8	4,535
Non-fatal.....	1,595	458	2,696	2,793	29,600	45,023	5,656	4,466	6,242	12,694	184	111,407
Property damage ¹	5,448	1,346	11,539	7,922	108,118	98,585	13,023	18,847	34,918	36,595	476	336,817
Persons Killed.....	82	29	255	240	1,622	1,719	202	287	426	559	8	5,429
Drivers.....	18	5	96	90	585	672	86	134	183	226	3	2,098
Passengers.....	21	11	75	71	480	557	70	114	147	194	3	1,743
Pedestrians.....	38	10	78	65	464	393	30	35	60	111	1	1,285
Bicyclists.....	3	2	2	5	53	22	7	—	5	15	—	114
Motorcyclists and passengers.....	1	1	4	8	40	66	7	1	5	7	1	141
Others.....	1	—	—	1	—	9	2	3	26	6	—	48
Persons Injured.....	2,240	686	3,833	4,306	44,270	67,280	8,640	7,227	9,878	19,500	282	168,142
Drivers.....	694	295	1,310	1,686	12,349	28,169	3,912	3,026	4,024	7,943	117	63,525
Passengers.....	855	296	1,541	1,859	19,644	27,780	3,642	3,511	4,388	9,017	136	72,669
Pedestrians.....	590	73	727	508	9,019	7,091	670	459	820	1,461	12	21,430
Bicyclists.....	37	8	111	120	1,990	1,530	155	97	168	346	5	4,567
Motorcyclists and passengers.....	47	13	141	104	1,268	2,595	231	111	268	580	12	5,370
Others.....	17	1	3	29	—	115	30	23	210	153	—	581
Total Property Damage²..... \$'000	3,684	932	7,057	6,490	74,981	79,762	8,240	12,271	21,220	28,138	543	243,318

¹ All reported accidents are those resulting in property damage estimated at \$100 or over.² Estimate.

PART III.—WATER TRANSPORT*

The Canada Shipping Act.—Legislation regarding shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments, the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

Section 1.—Shipping Facilities and Traffic

Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that Canadian shipping must compete with foreign flag shipping.

Within the region from approximately Havre St. Pierre on the St. Lawrence River upstream to the head of the Great Lakes, the carriage of goods or passengers from one Canadian port to another Canadian port, commonly known as the coasting trade, is restricted to ships registered in Canada. Elsewhere in Canada, the coasting trade is open to all Commonwealth ships.

Canadian Registry.—Under Part I of the Canada Shipping Act, ships in excess of 15 tons net register and pleasure yachts in excess of 20 tons net are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the

* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, administrative services and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Water Transport Committee, Canadian Transport Commission; and canal traffic and statistics of shipping by the Transportation and Public Utilities Division, Dominion Bureau of Statistics.

Act restricts ownership to British subjects or bodies corporate incorporated under the law of a country of the Commonwealth or of the Republic of Ireland and having their principal place of business in those countries. Under the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships are given the general designation 'British Ship', and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping at one of the 75 Ports of Registry in Canada.

1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1965-67

NOTE.—Figures from 1935 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Province or Territory	1965		1966		1967	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
Newfoundland.....	884	103,308	947	125,221	1,040	163,044
Prince Edward Island.....	922	21,515	1,046	24,187	1,126	24,721
Nova Scotia.....	7,259	176,273	7,432	193,372	7,579	201,696
New Brunswick.....	2,480	122,125	2,604	143,851	2,703	151,014
Quebec.....	2,999	1,013,820	3,099	1,072,423	3,055	1,091,011
Ontario.....	2,485	1,009,927	2,549	1,115,695	2,579	1,100,931
Manitoba.....	114	19,085	110	19,505	109	19,465
Saskatchewan.....	1	108	1	108	1	108
Alberta.....	12	686	12	736	15	873
British Columbia.....	7,569	798,994	7,929	854,253	8,237	914,096
Yukon Territory.....	6	1,435	6	1,435	7	1,470
Totals.....	24,731	3,267,276	25,735	3,550,786	26,451	3,668,429

Shipping Traffic.—Table 2 shows the number and tonnage of all vessels (except those of less than 15 registered net tons, naval vessels and, for 1962-67, fishing vessels) entering Canadian customs and non-customs ports.

2.—Vessels Entered at Canadian Ports, 1958-67

Year	In International Seaborne Shipping		In Coastwise Shipping		Totals	
	Vessels	Registered Net Tons	Vessels	Registered Net Tons	Vessels	Registered Net Tons
	No.	No.	No.	No.	No.	No.
1958.....	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659
1959.....	33,251	67,526,464	110,702	85,536,408	143,953	153,062,872
1960.....	33,397	74,805,002	120,125	88,493,116	153,522	163,298,118
1961.....	31,832	77,140,524	115,339	91,157,708	147,171	168,298,232
1962.....	30,269	81,942,501	112,325	87,767,018	142,594	169,709,519
1963.....	29,169	87,385,238	107,232	87,257,470	136,401	174,642,708
1964.....	29,809	92,799,912	105,186	91,007,726	134,995	183,807,638
1965.....	28,792	98,128,231	99,153	89,363,142	127,945	187,491,373
1966.....	28,871	99,852,760	102,400	96,648,426	131,271	196,501,186
1967.....	27,025	97,488,757	95,999	88,639,451	123,024	186,128,208

3.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1967 with Totals for 1966

NOTE.—Only ports handling over 300,000 tons are listed.

Province and Port	International		Coastwise		Total	Total
	Loaded	Unloaded	Loaded	Unloaded	1967	1966
	tons	tons	tons	tons	tons	tons
Newfoundland	1,433,348	1,063,671	987,201	1,933,990	5,418,210	6,669,076
Corner Brook.....	378,747	193,971	18,991	310,373	902,082	1,075,493
Bell Island.....	12,992	—	—	8,077	21,069	1,074,289
St. John's.....	11,110	295,486	86,887	503,738	897,021	898,407
Holyrood.....	2,690	350,285	339,194	40	692,209	687,269
Botwood.....	379,198	83,197	14,988	154,702	632,085	566,584
Port aux Basques.....	601	213	36,456	350,190	387,460	402,784
Stephenville.....	328,780	448	68,866	11,432	409,526	391,516
Prince Edward Island	67,801	176,196	203,559	359,411	806,967	730,450
Charlottetown.....	3,016	169,666	177,683	312,928	663,293	580,904
Nova Scotia	5,048,333	5,307,494	3,964,725	1,380,120	15,700,672	17,451,551
Halifax.....	1,982,987	4,554,999	2,078,242	451,885	9,068,113	9,407,069
Sydney.....	96,416	618,996	1,057,981	575,464	2,348,857	3,272,792
Hantsport.....	1,687,851	3,844	3,003	—	1,694,698	1,882,720
Port Hawkesbury.....	519,432	56,163	23,307	39,685	638,317	801,725
North Sydney.....	8,988	79	364,881	30,660	404,608	445,844
Little Narrows.....	136,772	—	202,195	—	338,967	315,485
New Brunswick	2,060,314	3,204,243	1,110,653	1,037,024	7,412,234	7,831,318
Saint John.....	1,227,946	2,927,969	1,003,901	429,925	5,589,741	5,979,792
Dalhousie.....	646,736	27,139	7,196	—	681,071	732,796
Quebec	39,125,494	15,126,089	11,685,559	14,612,435	80,549,577	87,479,182
Montreal.....	3,916,189	6,122,627	4,420,899	4,098,388	18,558,103	22,835,720
Sept Îles-Pointe Noire.....	18,519,408	645,595	3,207,798	292,382	22,665,183	19,947,778
Port Cartier.....	9,173,731	119,715	15,531	233,108	9,542,085	9,941,342
Baie Comeau.....	1,998,275	745,649	249,989	1,485,009	4,478,922	8,426,372
Quebec.....	2,103,651	1,535,711	227,238	3,178,888	7,045,488	6,366,407
Sorel.....	1,234,533	610,022	325	2,327,837	4,172,717	5,157,414
Trois-Rivières.....	945,102	862,521	27,867	1,220,966	3,056,456	4,522,076
Port Alfred.....	450,386	3,296,890	4,694	455,381	4,207,351	4,152,458
Contrecoeur.....	413,726	718,916	87,587	7,448	1,227,677	1,574,757
Havre St. Pierre.....	27,432	—	1,761,739	15,454	1,604,625	1,013,563
Forestville.....	—	—	704,008	19,954	723,962	869,349
Chicoutimi.....	7,393	71,449	8,717	492,363	579,922	566,244
Rimouski.....	23,572	76,629	72,492	376,411	549,104	520,603
Ontario	9,470,237	21,590,375	16,687,983	15,289,835	63,038,430	71,350,656
Port Arthur-Port William.....	3,846,026	368,989	10,095,241	960,168	15,270,424	19,508,762
Hamilton.....	305,722	6,549,214	299,010	3,439,134	10,593,080	10,718,676
Toronto.....	255,991	3,395,436	200,785	1,906,533	5,758,745	5,594,678
Sault Ste. Marie.....	209,452	2,918,977	184,148	1,291,646	4,604,223	5,088,236
Sarnia.....	207,313	1,083,097	2,105,254	516,681	3,912,345	4,390,946
Port Colborne.....	1,138,479	177,957	174,305	782,136	2,272,877	3,423,172
Windsor-Walkerville.....	586,691	1,259,570	539,050	555,070	2,950,381	3,077,117
Port Credit.....	—	2,789,826	175,641	300,142	3,245,609	2,997,114
Clarkson.....	—	57,500	460,599	1,129,512	1,647,611	2,216,705
Picton.....	788,180	106,589	215,496	24,243	1,134,508	1,220,444
Colborne.....	—	—	879,884	1,850	881,734	1,161,741
Goderich.....	392,200	64,617	541,689	410,185	1,408,691	1,071,987
Prescott.....	300	240,267	129,814	461,810	832,191	1,030,994
Little Current.....	593,706	389,316	1,420	57,544	1,041,986	951,163
Kingston.....	9,883	149,947	29,019	291,659	480,508	762,598
Midland.....	—	36,063	11,400	492,961	540,424	722,448
Thorold.....	114,251	308,856	533	243,459	667,099	716,922
Depot Harbour.....	708,679	—	14,014	—	722,693	704,855
Parry Sound.....	—	9,470	—	387,221	396,691	412,889
Michipicoten Harbour.....	183,226	32,110	47,141	43,082	305,559	411,024
Owen Sound.....	—	58,037	32,449	281,519	372,005	394,488

3.—Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1967 with Totals for 1966—concluded

Province and Port	International		Coastwise		Total 1967	Total 1966
	Loaded	Unloaded	Loaded	Unloaded		
	tons	tons	tons	tons	tons	tons
Ontario—concluded						
Port Stanley.....	—	133,814	10,335	191,679	335,828	380,013
Oshawa.....	—	140,928	—	132,534	273,462	337,736
Port Burwell.....	—	252,267	—	1,600	253,867	331,362
Bellefleur.....	—	43,190	105,312	28,669	177,171	329,746
Manitoba	625,152	23,017	19,549	53	667,771	688,040
Churchill.....	625,152	23,017	19,549	53	667,771	688,040
British Columbia	22,194,512	3,843,746	20,233,316	20,196,391	66,467,965	66,211,545
Vancouver.....	11,562,141	1,995,019	5,744,887	4,782,480	24,084,527	21,652,467
New Westminster.....	1,460,937	152,361	2,121,091	1,532,381	5,266,770	5,451,606
Nanaimo.....	910,827	52,958	214,636	1,531,050	2,709,471	2,699,175
Victoria.....	1,217,300	97,203	390,986	839,389	2,544,878	2,448,981
Duncan Bay—Campbell River.....	458,125	116,113	225,133	1,816,266	2,615,637	2,414,718
Britannia Beach.....	61,555	—	1,386,995	774,749	2,223,299	1,963,369
Powell River.....	304,436	47,676	307,113	887,837	1,547,062	1,750,112
Crofton.....	394,581	62,208	75,928	1,112,281	1,644,998	1,630,786
Port Alberni.....	907,433	29,852	56,289	351,714	1,345,288	1,617,276
Prince Rupert.....	596,977	453,413	62,847	344,578	1,457,815	1,513,132
North Arm Fraser River.....	4,800	—	86,743	753,745	845,288	1,396,504
Port Mellon.....	31,179	438	57,280	1,029,079	1,117,976	1,287,670
Ocean Falls.....	46,130	49,504	315,102	235,118	645,854	1,148,382
Lady Smith.....	46,986	—	863,792	81,454	992,232	937,329
Andy's Bay.....	—	—	19,040	517,154	536,194	829,040
Blubber Bay.....	644,405	9,960	30,949	278	685,592	773,555
Kitimat.....	126,942	500,419	72,451	73,295	773,107	759,873
Teakern Arm.....	—	—	529,576	168,541	698,117	692,723
Texada.....	692,428	—	77	2,663	695,168	637,722
Chemainus.....	491,103	2,513	123,438	147,010	764,062	573,132
Blind Bay.....	—	—	178,669	70,983	249,652	520,944
Jedway.....	441,399	—	255	6,207	447,861	482,280
Tahsis.....	203,715	27,740	55,956	141,858	429,269	448,915
Beaver Cove.....	—	—	477,801	13,976	491,777	442,563
Bamberton.....	1,508	25,524	356,469	35,272	418,773	430,631
Sarita River.....	—	—	170,520	3,178	173,698	413,517
Zeballos.....	229,734	—	101,173	3,838	334,745	408,584
Vananda.....	219,355	—	397,250	10,943	627,548	384,565
Quatsino.....	62,600	84,237	88,595	96,650	332,082	354,396
Squamish.....	10,905	62,300	262,564	158,592	494,361	315,382
Northwest Territories	—	—	1,009	59,043	60,052	43,046
Totals	80,025,191	50,334,831	54,893,554	54,868,302	240,121,878	258,454,864

The freight movement through a large port takes a number of different forms. These include cargoes for or from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e., domestic freight moving between Canadian points. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 4 shows the principal commodities loaded and unloaded in foreign and coastwise shipping at the 12 ports handling the largest cargo volumes in 1967. These ports handled 66.7 p.c. of all Canada's international shipping and 45.8 p.c. of the coastwise trade. The specific commodities shown are those transported in volume and often in bulk form.

4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1967

NOTE.—Only commodities totalling over 50,000 tons are listed.

Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal	3,916,189	6,122,627	4,420,899	4,098,388	18,558,103
Wheat.....	1,824,873	56,114	—	2,400,562	4,281,549
Fuel oil.....	64,440	1,821,147	2,320,975	24,889	4,231,451
Gasoline.....	—	296,614	1,256,950	20,365	1,573,929
Crude petroleum.....	—	1,027,119	33,561	—	1,060,680
Coal, bituminous.....	—	307,765	—	45,207	352,972
Barley.....	59,932	4,920	—	309,377	374,229
Corn.....	35,562	326,617	—	—	362,179
Plate and sheet steel.....	60,509	112,784	11,290	103,358	287,941
Raw sugar.....	58	327,854	—	—	327,912
Salt.....	85	60,759	100	328,244	389,188
Lubricating oil and grease.....	1,666	63,275	187,992	20,572	273,505
Gypsum.....	—	—	—	254,569	254,569
Wheat flour.....	182,045	450	6,569	6,337	195,401
Cement.....	493	9,705	112,740	—	122,938
Soybeans.....	77,220	42,273	—	57,011	176,504
Bars and rods, steel.....	6,392	52,836	9,352	8,832	77,412
Structural shapes.....	17,558	120,789	15,670	2,869	156,886
Flaxseed.....	35,378	4,732	—	74,371	114,481
Miscellaneous food preparations, <i>n.e.s.</i>	12,506	11,927	66,885	35,973	127,291
Oats.....	9,941	—	—	143,717	153,658
Molasses, crude.....	—	103,548	—	—	103,548
Organic chemicals, <i>n.e.s.</i>	39,655	42,323	3,053	388	85,419
Machinery, <i>n.e.s.</i>	15,509	45,489	26,645	4,906	92,549
Copper and alloys.....	99,473	691	—	—	100,164
Crude non-metallic minerals, <i>n.e.s.</i>	49,566	6,804	81	—	56,451
Petroleum coal products, <i>n.e.s.</i>	9,856	45,449	17,934	23,679	96,918
Nickel-copper ore.....	80,335	6	—	—	80,341
Personal and household goods.....	3,641	29,207	2,459	1,198	36,505
Ferro-alloys.....	23,198	12,392	4,715	186	40,491
Other commodities not listed.....	1,206,298	1,189,038	343,928	231,778	2,971,042
Vancouver	11,562,141	1,995,019	5,744,887	4,782,480	24,084,527
Wheat.....	3,495,612	—	33,466	111	3,529,189
Pulpwood.....	490,080	—	2,533,766	252,850	3,278,696
Sund and gravel.....	1	412,688	11,614	2,087,931	2,512,234
Lumber and timber.....	1,211,769	12,881	159,399	179,619	1,563,668
Logs.....	313,307	9,066	145,399	1,253,799	1,721,571
Fuel oil.....	73,473	166,086	976,692	259	1,216,510
Fertilizers.....	1,184,605	6,504	4,415	504	1,196,028
Hogged fuel.....	116,250	—	901,976	33,900	1,052,126
Coal, bituminous.....	1,159,432	2	521	—	1,159,955
Sulphur in ores.....	890,362	—	22,980	—	913,292
Gasoline.....	22,894	—	365,303	133	388,530
Newsprint.....	26,610	—	306	327,216	354,132
Pulp.....	343,318	2,572	1,101	274,603	621,594
Barley.....	528,391	—	—	—	528,391
Rapeseed.....	202,434	—	—	—	202,434
Salt.....	—	226,810	85,964	—	312,774
Cement.....	15,350	5,636	10,819	137,501	169,306
Phosphate rock.....	—	171,307	—	—	171,307
Inorganic chemicals.....	3,930	20,243	143,665	—	167,838
Flaxseed.....	139,506	—	—	—	139,506
Asbestos.....	56,192	84,754	550	—	141,496
Copper ore and concentrates.....	228,590	12,565	—	6,232	247,387
Oats.....	23,711	—	—	—	23,711
Raw sugar.....	—	124,376	—	—	124,376
Wheat flour.....	108,906	10	60	—	108,976
Rye.....	89,930	—	—	—	89,930
Concentrated complete feeds.....	55,144	—	1	—	55,145
Plate and sheet steel.....	117	88,894	1,893	502	91,406
Structural shapes.....	5,892	79,554	8,989	1,820	96,255
Organic chemicals.....	7,879	3,109	70,619	150	81,757
Miscellaneous food preparations, <i>n.e.s.</i>	18,346	17,210	28,574	153	64,283
Limestone.....	7,600	14,900	—	120,312	142,812
Machinery, <i>n.e.s.</i>	5,963	24,206	33,886	9,798	73,853

Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1967—continued

Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Vancouver—concluded					
Bars and rods, steel.....	125	47,234	52	20	47,431
Veneer and plywood.....	25,884	24,545	935	748	52,112
Other commodities not listed.....	710,538	439,867	201,992	94,319	1,446,716
Sept Îles-Pointe Noire.....	18,519,408	645,595	3,207,798	292,382	22,665,183
Iron ore and concentrates.....	18,467,021	—	3,186,025	—	21,653,046
Fuel oil.....	—	500,536	2,990	92,353	595,879
Bentonite.....	—	58,584	—	—	58,584
Other commodities not listed.....	52,387	86,475	18,783	200,029	357,674
Port Arthur-Fort William.....	3,846,026	368,989	10,095,241	960,168	15,270,424
Wheat.....	383,285	—	6,777,755	—	7,161,040
Iron ore and concentrates.....	2,247,163	—	964,893	—	3,212,056
Barley.....	404,272	—	1,237,206	—	1,641,478
Oats.....	32,893	—	595,766	—	628,659
Flaxseed.....	141,338	—	156,323	—	297,661
Coal, bituminous.....	—	297,673	—	—	297,673
Pulpwood.....	71,840	—	27,500	183,750	283,090
Fuel oil.....	—	—	—	213,314	213,314
Rye.....	67,374	—	83,540	—	150,914
Newsprint.....	191,280	—	726	—	192,006
Wheat flour.....	20,788	—	51,649	104	72,541
Gasoline.....	—	—	—	142,795	142,795
Plate and sheet steel.....	—	1,053	—	74,865	75,918
Malt and malt flour.....	34,096	—	42,076	—	76,172
Hulls, screenings and chaff.....	25,990	—	61,390	—	87,380
Fertilizers.....	99,240	—	—	—	99,240
Concentrated and complete feeds.....	89,861	—	450	—	90,311
Salt.....	—	—	—	113,933	113,933
Other commodities not listed.....	36,606	70,263	95,967	231,407	434,243
Port Cartier.....	9,173,731	119,715	15,531	233,108	9,542,085
Iron ore concentrates.....	9,166,577	—	10,883	—	9,177,460
Fuel oil.....	—	118,262	2,503	—	120,765
Other commodities not listed.....	7,154	1,453	2,145	233,108	243,860
Hamilton.....	305,722	6,549,214	299,010	3,439,134	10,593,080
Iron ore concentrates.....	—	2,362,088	—	2,797,007	5,159,095
Coal, bituminous.....	—	3,535,648	2,805	—	3,538,453
Fuel oil.....	—	228,783	—	383,152	611,935
Plate and sheet steel.....	152,722	10,087	122,185	2,056	287,050
Soybeans.....	257	136,453	—	—	136,710
Wheat.....	—	—	64,250	92,965	157,215
Other commodities not listed.....	152,743	276,155	109,770	163,954	702,622
Calfax.....	1,932,987	4,554,999	2,078,242	451,885	9,068,113
Crude petroleum.....	—	3,473,185	—	—	3,473,185
Fuel oil.....	27,404	803,906	1,323,697	124,677	2,279,684
Gypsum.....	1,147,893	10	23,390	—	1,171,293
Gasoline.....	235	46,417	646,270	118,875	811,797
Wheat.....	367,476	—	—	139,508	506,984
Wheat flour.....	58,443	53	7,852	—	66,348
Other commodities not listed.....	381,636	231,428	77,033	68,825	758,822
Quebec.....	2,103,651	1,535,711	227,238	3,178,888	7,045,488
Fuel oil.....	—	880,735	85,251	—	1,528,950
Wheat.....	651,364	109,396	—	554,905	1,315,665
Pulpwood.....	9,540	—	—	823,750	833,290
Gasoline.....	—	72,616	13,232	593,468	679,316
Newsprint.....	338,308	—	205	—	338,513
Barley.....	92,751	8,372	482	306,957	408,562
Asbestos.....	205,385	—	—	—	205,385
Zinc ore concentrates.....	349,858	—	—	6,036	355,894
Coal, bituminous.....	—	19,245	—	103,623	122,868

4.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1967—concluded

Port and Commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Quebec—concluded					
Oats.....	10,445	11,546	353	122,015	144,359
Cement.....	—	260	81,958	—	82,218
Corn.....	158,070	274,708	—	—	432,778
Pulp.....	61,444	27	141	—	61,612
Other commodities not listed.....	226,486	158,806	45,616	105,170	536,078
Toronto	255,991	3,395,436	200,785	1,906,533	5,758,745
Coal, bituminous.....	—	1,943,114	—	630,938	2,574,052
Fuel oil.....	—	256,163	108,723	336,946	701,832
Cement.....	—	—	—	292,208	292,208
Soybeans.....	1,655	339,582	—	27,251	368,488
Wheat.....	—	16,967	—	171,512	188,479
Salt.....	37	73,578	—	132,601	206,216
Gasoline.....	—	2,516	73,915	51,595	128,026
Raw sugar.....	—	92,732	—	—	92,732
Barley.....	—	—	2,834	136,987	139,821
Soybean oil, meal and cake.....	98,961	—	—	—	98,961
Other commodities not listed.....	155,338	670,784	15,313	126,495	967,930
Saint John	1,227,946	2,927,969	1,003,901	429,925	5,589,741
Crude petroleum.....	—	2,141,022	—	—	2,141,022
Fuel oil.....	6,352	297,068	634,969	243,534	1,181,923
Wheat.....	485,516	—	—	—	485,516
Gasoline.....	—	—	306,141	155,520	461,661
Raw sugar.....	113	254,448	—	—	254,561
Wheat flour.....	170,414	—	4,589	—	175,003
Newsprint.....	114,108	54	—	—	114,162
Other commodities not listed.....	451,443	235,377	58,202	30,871	775,893
Sault Ste. Marie	209,452	2,918,977	184,148	1,291,646	4,604,223
Coal, bituminous.....	—	2,144,753	—	—	2,144,753
Iron ore and concentrates.....	—	128,302	—	916,352	1,044,654
Limestone.....	—	567,900	—	—	567,900
Fuel oil.....	—	70,568	—	223,153	293,721
Plate and sheet steel.....	24,958	—	101,330	397	126,685
Primary iron and steel, <i>n.e.s.</i>	89,457	—	19,435	—	108,892
Gasoline.....	—	—	3	111,566	111,569
Pig iron.....	77,273	—	—	2,941	80,214
Other commodities not listed.....	17,764	7,454	63,380	87,237	125,835
Bale Cemeau	1,998,275	745,649	249,989	1,485,009	4,478,922
Wheat.....	1,204,377	185,491	—	1,018,192	2,408,060
Corn.....	170,937	111,461	—	—	282,398
Soybeans.....	49,574	52,805	—	—	102,379
Pulpwood.....	75,764	—	227,170	—	302,934
Newsprint.....	314,129	—	—	—	314,129
Barley.....	101,479	18,623	—	80,186	200,288
Fuel oil.....	—	95,646	—	78,986	174,632
Alumina and bauxite ores.....	—	174,257	—	—	174,257
Cement.....	—	—	—	177,146	177,146
Aluminum.....	42,000	—	10,160	—	52,160
Other commodities not listed.....	40,015	107,866	12,659	130,499	290,539

Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co-ordination of land and water transportation at many of the ports. Facilities provided to enable interchange movements include the necessary docks and wharves, some for passenger traffic but most of them for freight, warehouses for handling of general cargo, and special equipment for bulk freight of all kinds. Facilities

may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, vessel repair docks.

Nine of the principal harbours of Canada are administered by the National Harbours Board and 11 other major harbours are administered by Harbour Commissions, which include municipal as well as Federal Government appointees. In addition, there are some 300 public harbours under the direct supervision of the Department of Transport, administered under rules and regulations approved by the Governor General in Council. Harbour masters are appointed by the Minister of Transport for these harbours, their remuneration being paid from fees levied on vessels, under the terms of the Canada Shipping Act.

Throughout the country there are several thousand wharves and breakwaters administered by the Department of Transport under the Government Harbours and Piers Act. These facilities are for the accommodation of cargo ships and commercial fishing craft and are under the general supervision of the Department of Transport District Marine Agents. Wharfingers, whose remuneration is determined as a percentage of wharfage fees collected, are appointed for the direct supervision of these public wharves and floats. They are designed to accommodate the smallest fishing or pleasure craft or the largest ocean-going vessels, according to local requirements. At many ports, in addition to public harbour works operated by the administering authority, there are extensive dock and handling facilities owned by private companies including railway, lumber, pulp and paper, coal, steel, iron ore, petroleum, grain, fish and other industries moving large volumes of bulk materials.

In 1967, the harbours of Canada handled more than 240,000,000 tons of cargo in 246,000 vessel arrivals and departures in international seaborne and coastwise shipping.

National Harbours Board.—The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, etc., at the harbours of St. John's, Halifax, Saint John, Chicoutimi, Quebec, Trois-Rivières, Montreal, Vancouver and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier and Champlain Bridges at Montreal. Facilities at the larger harbours are listed in Table 5, and summary traffic statistics for 1966 and 1967 in Table 6. Operating revenues and expenditures are given in Table 20, p. 854.

5.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1967

NOTE.—The facilities at these ports include those under the control of other agencies as well as those of the National Harbours Board.

Item	Halifax	Saint John	Quebec	Trois-Rivières	Montreal	Vancouver
Minimum depth of approach channel..... ft.	70	30	30	35	35	39
Harbour railway..... miles	104	64	26	5	61	78
Piers, wharves, jetties, etc. No.	83	34	40	18	135	109
Length of berthing..... ft.	35,445	24,931	23,500	9,183	74,000	40,632
Transit-shed floor space.....sq. ft.	1,451,902	938,000	754,000	482,365	3,725,000	1,748,600
Cold storage warehouse capacity.....cu. ft.	1,719,000	900,000	500,000	—	2,900,000	3,633,297
Grain Elevators—						
Capacity..... bu.	5,152,500	3,000,000	8,000,000	9,300,000	22,262,000	21,775,500
Loading rate..... bu. per hr.	102,000	150,000	60,000	55,000	728,000	280,000
Floating crane capacity..... tons	80	65	80	—	365 ¹	130
Coal dock storage capacity.....	—	—	250,000	400,000	175,000	110,000
Oil tank storage capacity..... gal.	271,280,000	41,346,500	180,502,083	44,634,550	1,279,000,000	320,636,236

¹ Includes a St. Lawrence Seaway crane of 275-ton capacity.

6.—Summary Traffic Statistics for Harbours Administered by the National Harbours Board, 1966 and 1967

Port or Elevator	Vessel Arrivals	Vessel Tonnage	Cargo Tonnage	Grain Elevator Deliveries
	No.	No.	No.	bu.
St. John's, Nfld.....1966	1,927	1,707,555	669,164	...
.....1967	2,019	1,728,785	754,750	...
Halifax.....1966	3,321	7,032,776	9,652,985	18,853,696
.....1967	3,136	6,561,400	9,363,659	15,232,482
Saint John.....1966	1,856	4,432,997	6,468,603	22,262,951
.....1967	1,859	4,089,356	5,905,415	16,715,036
Chicoutimi.....1966	168	263,991	554,526	...
.....1967	133	275,410	592,076	...
Quebec.....1966	2,818	6,834,000	6,494,192	47,330,573
.....1967	2,706	7,604,000	7,174,064	56,896,701
Trois-Rivières.....1966	1,876	3,716,577	5,079,615	48,719,080
.....1967	1,850	3,241,774	3,531,221	24,494,110
Montreal.....1966	6,216	23,112,561	24,872,222	186,126,696
.....1967	5,805	21,089,851	20,740,279	124,578,829
Prescott.....1966	...	...	...	18,674,620
.....1967	...	...	...	13,404,520
Port Colborne.....1966	...	...	...	12,650,061
.....1967	...	...	...	4,089,739
Churchill.....1966	71	287,747	693,413	22,192,476
.....1967	62	276,975	678,932	21,222,978
Vancouver.....1966	20,951	19,400,691	21,703,131	203,499,755
.....1967	21,015	20,267,854	23,096,287	173,973,736
Totals.....1966	39,204	66,788,895	76,187,851	580,309,908
.....1967	38,585	65,135,405	71,836,683	450,608,131

Subsection 3.—Canals

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport, together with those under the jurisdiction of the St. Lawrence Seaway Authority, comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

Those included under the two classifications—Seaway canals and Department of Transport canals—are listed in Table 7 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrew's Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1967, 98,773,574 tons of freight and 21,046 vessels passed through the canals as compared with 110,702,534 tons of freight and 23,466 vessels during 1966. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1967 carried 165,111 passengers as compared with 178,482 in 1966.

**7.—Lengths of Channels and Dimensions of Locks under the Control of the
St. Lawrence Seaway Authority or the Department of Transport**

Name	Location	Length of Channel	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
Seaway Canals¹						
Main Route—						
South Shore.....	Montreal to Caughnawaga.....	20	2	766	80	30
Beauharnois.....	Melocheville to Lake St. Francis.....	15	2	766	80	30
Iroquois.....	Iroquois Point.....	1	1	766	80	30
Welland.....	Port Weller, Lake Ontario, to Port Colborne, Lake Erie.....	27.60	8	859	80	30
Non-toll—						
Lachine (not through canal).....	Montreal to Lachine.....	7.5	2	270	45	14
Cornwall (not through canal).....	Cornwall to closure dyke.....	3.50	4	270	43.67	14
Sault Ste. Marie.....	St. Mary's Rapids, Sault Ste. Marie....	1.38	1	900	60	18.25
Department of Transport Canals						
Atlantic Area—						
Canso Canal.....	Canso Causeway, N.S.....	0.78	1	820	80	32
St. Peter's.....	St. Peter's Bay to Bras d'Or Lakes, Cape Breton, N.S.....	0.50	1	300	47.4	17
Richelieu River—						
St. Ours.....	St. Ours, Que.....	0.12	1	339	45	12
Chambly.....	Chambly to St. Jean, Que.....	11.76	9	125.1	23.3	6.5
Ottawa and Rideau Rivers—						
Ste. Anne.....	Junction of St. Lawrence and Ottawa Rivers.....	0.62	1	200	45	9
Carillon.....	Carillon Rapids, Ottawa River.....	0.50	1	200	45	9
Rideau.....	Ottawa to Kingston.....	123.53	47	134	33	5.5
	Rideau Lake to Perth (Tay Branch)...	6.12	2	134	33	5.5
Lake Ontario to Georgian Bay—						
Trent.....	Trenton to Peterborough lock, Peter- borough.....	88.74	18	175	33	8 ²
	Peterborough lock to Big Chute.....	143.71	22	134	33	6
	Big Chute Marine Railway.....	—	—	—	—	4
	Big Chute to Port Severn.....	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch).....	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch)	25.00	—	—	—	4.5
Murray.....	Isthmus of Murray, Bay of Quinte.....	7.53	—	—	—	8.5 ³

¹ Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley-Dondero canal and two locks near Alton, N. Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities. ² Notice must be given by vessels of more than six-foot draught. ³ With Lake Ontario at elevation of 243 feet.

8.—Traffic through Canadian Canals, by Registry of Vessel, Navigation Seasons 1958-67

NOTE.—Figures include duplications where vessels pass through two or more canals.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
1958.....	21,763	26,635,559	3,216	3,029,624	302	198,926	2,170	1,793,309
1959.....	21,363	28,706,462	4,819	4,233,936	1,125	3,130,140	3,252	7,321,449
1960.....	19,816	28,963,294	5,046	3,660,931	1,303	3,971,587	3,464	9,455,739
1961.....	17,332	32,531,256	3,307	2,515,262	1,845	6,294,753	3,496	10,065,901
1962.....	13,836	31,677,612	3,524	4,045,470	1,938	6,769,909	3,538	11,017,809
1963.....	13,821	38,040,238	3,106	4,016,111	1,637	6,932,454	3,247	10,248,060
1964.....	14,256	40,025,355	2,906	5,461,310	2,043	9,494,484	3,950	13,176,847
1965.....	12,959	42,704,703	2,827	3,966,615	2,399	10,852,520	5,171	14,963,462
1966.....	15,151	53,019,538	2,553	3,971,446	1,470	6,270,454	4,292	16,875,582
1967.....	12,894	49,098,644	2,902	4,935,462	1,350	5,506,251	3,900	15,141,400

9.—Freight Traffic through Canadian Canals, by Origin of Cargo, Navigation Seasons 1958-67

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Navigation Season	Canada		United States		Britain		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1958.....	21,832,526	62.2	12,177,376	34.7	223,059	0.6	863,626	2.5	35,096,587
1959.....	30,829,746	60.4	17,134,694	33.5	326,992	0.6	2,784,700	5.5	51,076,132
1960.....	28,886,228	54.6	20,993,117	39.6	332,794	0.6	2,734,744	5.2	52,946,883
1961.....	31,487,898	55.1	23,175,964	40.5	315,991	0.5	2,242,843	3.9	57,222,696
1962.....	33,972,361	53.4	26,228,794	41.3	805,831	1.3	2,561,305	4.0	63,568,291
1963.....	41,976,843	56.3	28,431,960	38.1	1,054,929	1.4	3,121,695	4.2	74,585,427
1964.....	56,298,982	60.3	31,488,638	33.8	1,089,385	1.2	4,399,845	4.7	93,276,850
1965.....	56,008,416	56.3	33,747,380	34.0	2,088,813	2.1	7,550,508	7.6	99,395,117
1966.....	66,478,706	60.1	34,146,570	30.8	1,256,946	1.1	8,820,312	8.0	110,702,534
1967.....	58,928,929	59.1	29,391,183	29.5	1,222,411	1.2	9,231,051	9.3	98,773,574

**10.—Tonnage of Products Carried by Canal, classified by Commodity Section,¹
Navigation Seasons 1966 and 1967**

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Year and Canal	Food, Feed, Beverages and Tobacco	Crude Materials, Inedible	Fabricated Materials, Inedible	End Products, Inedible	Miscel- laneous Freight	Domestic Package Freight	Total
	tons	tons	tons	tons	tons	tons	tons
1966							
Sault Ste. Marie.....	172,521	226,876	493,965	1,149	2,903	382,302	1,279,716
Welland.....	19,931,384	31,030,989	7,052,762	596,673	86,067	439,440	59,137,315
St. Lawrence River.....	19,113,305	20,402,951	8,361,634	437,716	186,525	592,136	49,094,267
Richelieu River.....	—	—	27,924	725	—	—	28,649
St. Peter's.....	252	—	325	—	25	—	602
Murray.....	—	—	—	—	—	—	—
Ottawa River.....	—	2	482	5	—	—	489
Rideau.....	—	—	434	—	—	—	434
Trent.....	—	—	106	—	—	—	106
St. Andrew's.....	767	—	643	171	50	—	1,631
Canso.....	218,955	176,190	734,023	58	30,099	—	1,159,325
Totals, 1966.....	39,437,184	51,837,008	16,672,298	1,036,497	305,669	1,413,878	110,702,534
1967							
Sault Ste. Marie.....	93,433	139,553	435,368	567	1,820	301,593	972,334
Welland.....	13,909,045	30,927,658	7,326,162	361,026	45,861	280,702	52,850,454
St. Lawrence River.....	13,214,139	21,452,148	8,370,524	496,258	114,145	354,304	44,001,518
Richelieu River.....	975	—	28,853	—	58	—	29,886
St. Peter's.....	706	5	—	—	28	—	739
Murray.....	—	—	—	—	—	—	—
Ottawa River.....	—	—	55	18	—	—	73
Rideau.....	—	—	—	—	—	—	—
Trent.....	—	—	47	—	—	—	47
St. Andrew's.....	1,048	—	400	—	232	—	1,680
Canso.....	160,391	92,745	625,319	1,892	36,496	—	916,843
Totals, 1967.....	27,379,737	52,612,109	16,786,728	859,761	195,640	936,599	98,773,574

¹ Standard commodity classification.

**11.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season
1967**

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Traffic by Direction		Origins of Cargo			Total Cargo
	Up	Down	Canada	United States	Other Countries	
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	429,880	542,454	887,974	83,817	543	972,334
Welland.....	22,372,176	30,478,278	27,456,093	21,010,295	4,384,066	52,850,454
St. Lawrence River.....	26,705,949	17,295,569	29,673,328	8,268,493	6,059,697	44,001,518
Richelieu River.....	25,653	4,233	28,853	1,033	—	29,886
St. Peter's.....	280	459	739	—	—	739
Murray.....	—	—	—	—	—	—
Ottawa River.....	73	—	73	—	—	73
Rideau.....	—	—	—	—	—	—
Trent.....	11	36	47	—	—	47
St. Andrew's.....	688	992	1,680	—	—	1,680
Canso.....	656,954	259,889	880,142	27,545	9,156	916,843
Totals.....	50,191,664	48,581,910	58,928,929	29,391,183	10,453,462	98,773,574

12.—St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland and Sault Ste. Marie Canals, 1966 and 1967

NOTE.—Duplications eliminated wherever possible.

Canals Used	1966			1967		
	Upbound Freight	Downbound Freight	Total	Upbound Freight	Downbound Freight	Total
	tons	tons	tons	tons	tons	tons
Traffic using Canadian St. Lawrence-Great Lakes System	28,983,445	38,665,509	67,648,954	29,675,187	32,151,006	61,826,193
St. Lawrence only	6,214,926	1,860,983	7,575,909	7,006,618	1,197,440	8,204,058
St. Lawrence and Welland	19,353,318	22,058,384	41,411,702	19,684,841	16,077,258	35,762,099
St. Lawrence, Welland and Sault Ste. Marie	40,792	65,855	106,647	14,490	20,871	35,361
Welland only	2,873,613	14,602,092	17,375,705	2,553,848	14,333,854	16,887,702
Welland and Sault Ste. Marie	177,069	75,450	252,519	118,997	46,295	165,292
Sault Ste. Marie	323,727	602,745	926,472	296,393	475,283	771,681
Traffic using United States Locks at Sault Ste. Marie	11,587,496	90,802,223	102,389,719	10,793,789	78,572,460	89,366,249
Totals	40,570,941	129,467,732	170,038,673	40,468,976	110,723,466	151,192,442

Cargo traffic through the Canadian lock and United States locks at Sault Ste. Marie during 1967 totalled 90,338,583 tons; the record to date was established in 1953 when 128,489,170 tons were reported through the lock systems. Of this volume, by far the greater portion travels through the American side, where the three wider and longer locks accommodated all but approximately 972,334 cargo tons in 1967. In terms of tonnage, three commodities—iron ore, wheat and coal—dominate all others in lake traffic, and in 1967 made up over 89 p.c. of movements through the Sault Ste. Marie locks. Iron ore shipments alone, at 63,596,042 tons, comprised 70 p.c. of the total and wheat shipments amounted to 9,283,731 tons, indicative of important sales abroad. A relatively small volume of wheat moves directly to foreign lands aboard ocean-going vessels, most of it being carried by the laker fleet to elevators along the St. Lawrence River to await later shipment to receiving countries. Bituminous coal shipped through the Sault Ste. Marie locks during 1967 amounted to 7,350,062 tons, reflecting a continuing, impressive consumption of this commodity in the Great Lakes region.

Canadian Use of the Panama Canal.—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of 5,059,000 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1967 and passing through the Panama Canal, only 6,000 long tons were destined for eastern Canadian ports. Similarly, of the 1,043,000 long tons of cargo leaving eastern Canadian ports and passing through the Panama Canal, 4,000 long tons were destined for western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 1,027,693 long tons in the year ended June 30, 1967; the total from any origin arriving at eastern Canadian ports after having passed through the Panama Canal was 613,117 long tons.

Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. The 1956 edition (pp. 821-829) gives detailed information on Great Lakes-St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and the 1960 Year Book (pp. 851-860) relates the story of the Seaway during the second year of its operation. The following article reviews the first decade of Seaway development and operations.

THE FIRST DECADE OF THE SEAWAY*

When the St. Lawrence Seaway was first opened to navigation in 1959, it was generally agreed that the first ten years of its operations should be considered a period of development. Now, with that ten years behind, it seems appropriate to review those developments—in the expectation that some reasonable assessments may be made of the trends in cargo traffic, of the broad impact of the Seaway on the Great Lakes community which it serves and of the prospects for the future.

The Traffic

The report of the first Tolls Committee, submitted to the Federal Government in 1958, established an objective of 50,000,000 tons of cargo for the Montreal-Lake Ontario section to be reached in the initial ten years. The fact that this level was all but attained by 1968 is not only a remarkable achievement in itself but is also a tribute to the prophetic powers of those who set this objective more than a decade ago.

Cargo tonnage through the old 14-foot St. Lawrence system had approximated 12,000,000 tons a year during the late 1950s. In 1959, during the first season of navigation on the 27-foot-deep Seaway, cargoes rose to over 20,000,000 tons and then, despite some hesitancy in 1960 and 1961, increased steadily and impressively to reach an all-time high of 49,200,000 tons in 1966. This record, which exceeded even the expectation of the tolls forecasts, gave reason to expect that the 50,000,000-ton target would be reached, on schedule, by 1968 but a five-week strike in 1967 tied up the majority of the Canadian Lakes fleet and contributed to a 5,000,000-ton decline from the previous year and a three-week strike in 1968, coupled with a late-season slowdown in bulk shipments, again prevented attainment of the 1966 level. Final totals for 1968 amounted to 48,000,000 tons through the Montreal-Lake Ontario section and 58,100,000 tons through the Welland; the 10,000,000-ton differential between these two sections has remained almost constant through recent years.

The growth in cargo tonnage has been accompanied by a change in the composition of Seaway traffic. Originally it was forecast that manufactured products would account for only about 10 p.c. of cargo movements and in the early years this was borne out by experience. However, general cargo increased to almost 13 p.c. in 1965 and remained at that level until 1968 when it exceeded 16 p.c. of the total tonnage. Much of this increase resulted from heavy volume movements of imported iron and steel products, bound primarily for United States ports and carried in large, ocean-going bulk carriers.

The future of general cargo is not certain. However, the fact that it has increased in volume year by year is an indication that the economic advantages offered by the Seaway route are being more widely recognized in both North America and abroad. And the growing movement of containers to ports like Toronto, Hamilton, Toledo, Cleveland, Detroit, Milwaukee and Chicago testifies to the willingness of Seaway users to adapt to the most up-to-date techniques in cargo handling. Many of these ports handled more than 1,000 containers during 1968.

Basically, of course, the Seaway has been and, in all probability, will remain a low-cost means of moving bulk cargo to and from the North American hinterland. Since 1959, two commodities have dominated the trade: iron ore, which annually represents between 30 p.c. and 37 p.c. of the total tonnage, and grain—especially wheat—which varies between 26 p.c. and 30 p.c. of all cargoes. In some years these two items alone have accounted for more than two thirds of the total tonnage, making the Seaway quite sensitive to variations in the flows of these commodities. Coal and petroleum products account for between 8 p.c. and 10 p.c. of tonnage in the Montreal-Lake Ontario section and easily 20 p.c. of Welland cargoes. Coal trade has increased sharply since the opening of the Lakeview Steam Generating Station and with the growth in steel production in

*Based on an address by Dr. Pierre Carnu, President of The St. Lawrence Seaway Authority, delivered Jan. 20, 1969, to the Joint Annual Conference of the Dominion Marine Association and the Lake Carriers' Association.

Hamilton. Three main classes of commodities are distinguishable in Seaway traffic: those that fluctuate with world demand, of which grain and manufactured iron and steel are examples; other raw materials such as iron ore, forest products, petroleum and coal for which demand is reasonably stable; and coastal trade, which is independent of national or international considerations. The pattern of trade movements through the Montreal-Lake Ontario section involving these commodities has changed very little during the Seaway's brief history. Grain is carried downbound; iron ore, fuel oil, coal and pulpwood move upbound into the Lakes; and general cargo flows in both directions. The most interesting change has occurred in the ratios of upbound to downbound traffic. In the first six years, downbound traffic tended to dominate the shipping pattern but since 1965 upbound shipments are more voluminous due largely to the increased movement of iron ore and imports of general cargo. In the Welland, downbound traffic has always been heavier than the upbound trade, usually in a ratio of three to two but a slight shift in this ratio has been developing since 1965, influenced by heavier upbound iron ore shipments.

Until 1963, traffic of Canadian origin using the Welland ranged between 47 p.c. and 50 p.c. of the total; since that time the ratio has increased slightly to between 52 p.c. and 54 p.c. Traffic of United States origin accounts for 40 p.c. to 45 p.c. and shipments originating overseas range up to 10 p.c. of the total tonnage. The situation is different for the Montreal-Lake Ontario section where two thirds of the traffic is of Canadian origin, the remainder being almost equally split between cargoes of United States and overseas origin. However, these statistics are, to some extent, misleading. For example, if destination is also considered it may be concluded that international trade approximates 70 p.c. of the total tonnage, with domestic shipments accounting for the remainder.

The System

It was apparent soon after the opening of the Seaway that, in coping with a growing and diversified traffic, a static approach to operation and maintenance on the Seaway could not suffice and that a continuing program of adaptation, modernization and change in plans and proposals would have to be followed. The Welland Canal which, by 1959, had been in service for 27 years, required immediate attention when traffic increased. It was logical, when serious queues started to develop in 1962 and 1963, to prepare plans for twinning the remaining single locks. But within a year it became evident that such a solution would not achieve the desired result of doubling the Welland's capacity which, with the existing vessel mix and direction of cargoes, appeared to be just over 50,000,000 tons. Moreover, improvements that would result from twinning would not have been available until the completion of the heavy construction program four or five years later. Because the problem of congestion was too pressing to permit a deferred solution, a major improvement and modernization program was launched in the summer of 1964. Five channel widening projects were undertaken in 1965 and completed in 1966; a major alignment job was carried out at Lock 1 in 1965 and 1966; hydraulic modifications, designed to streamline the filling and emptying of Lock 2, were undertaken in 1964 and 1965, followed by similar improvements at Locks 1, 3 and 7 during the winters of 1964-66. Other major works included the hydraulic separation of the reach between Locks 6 and 7, with direct discharge of Lock 7 into the pondage area and additional tie-up wall facilities at Locks 1, 2, 3 and 4 and on the south side of the Guard Gate. Perhaps the most spectacular undertaking, and certainly the most expensive, is the channel relocation between Port Robinson and Ramey's Bend started in 1967 and scheduled for completion in 1972; the 8.6-mile channel will have a width of 350 feet.

In addition to these capital works, a series of major changes were introduced in Welland operations. As a result, the concept of traffic control evolved from a "pencil and paper" era to a total systems approach. Modern electronic equipment was in operation by September 1966. Equipment such as closed-circuit television systems, new navigation lights, lock telemetry and visual display boards appeared throughout the Welland to assist in the implementing of new traffic control procedures. A data collection system providing information on the performance of ships and locks also became available.

Meanwhile, in response to a need to firm up the closing date of the navigation season, major modifications were made to the two entrance locks of the Eastern Region—St. Lambert and Côte Ste. Catherine—to increase and modify the flow of water in order to flush ice under early winter and spring break-up conditions. Also in the same section, at Beauharnois, new studies to determine the capacity of the two locks in that area have been undertaken. The introduction to the Montreal-Lake Ontario section of techniques and procedures similar to those in use in the Welland is under way, in co-operation with the United States Saint Lawrence Seaway Development Corporation. As a result, a new Seaway-wide integrated traffic control system should be implemented by 1971, the main feature of which will be the employment of an on-line real-time computer for assisting Seaway personnel to schedule vessel movements from Montreal to Long Point in Lake Erie.

These improvements to the Seaway have produced some very significant benefits for the shipping industry which include: (1) faster and safer vessel transits despite increases in cargo tonnages and in the size of ships; (2) increases in drafts from 25' in 1959, to 25'6" in 1963 and to 25'9" in 1967; and (3) a longer season of navigation, increased from 222 days in 1959 to 250 days in 1968.

The Ports

The Seaway owes much of its success during the past decade to St. Lawrence and Great Lakes ports. If facilities to accommodate maximum-sized lakera and large ocean vessels had not been provided; if access channels had not been deepened to Seaway draft; if dredging at wharfs, piers and anchorage areas had not been carried out; if the necessary cargo terminal sheds, grain elevators, conveyor systems or pipelines had not been built or modified to meet the demands of increased traffic, the Seaway's achievements would never have been realized. Two distinct types of successful Seaway port may now be recognized: industrial harbours like Superior and Ashtabula which specialize in handling one commodity—iron ore or coal—and in accommodating only one class of vessel; and commercial and general ports of call where manufactured goods, grain, coal, iron ore and a score of other commodities are handled. The latter group includes Canadian ports such as Toronto, Hamilton and the Lakehead, and United States ports like Duluth, Milwaukee, Chicago, Detroit, Toledo, Cleveland and Buffalo. Together these ports usually handle about 70 p.c. of all Seaway tonnage.

The great seaport of Montreal, which feared so much for its future before the opening of the deep waterway, is also a Seaway port of call. Working as a trans-shipment and transfer point, it has become another port in the system, complementing those of the Great Lakes. It is distinctly to the advantage of the Seaway to have a world-famous and well-operated harbour of the size of Montreal, with all its extensive marine services and facilities, located at the entrance to the waterway. It is interesting to note, too, that a number of other specialty ports, like Baie Comeau, Sept Îles, Port Cartier and Pointe Noire, serving as trans-shipment points for grain and iron ore shipment terminals, have emerged at least indirectly as a result of the Seaway.

It is through these many thriving ports and their respective hinterlands that the Seaway has become—in ten years—a vital link between markets, connecting regions of production and consumption in the Great Lakes-St. Lawrence industrial basin.

The Ships

They come and go, in all sizes, shapes and forms, flying the flags of many nations and carrying cargoes originating from a multitude of ports of call. A few, both inland and ocean vessels, are veterans of the Great Lakes-St. Lawrence route from long before the Seaway came into existence. Others, born or conceived as a result of new economic considerations introduced by the opening of the Seaway, have emerged as dominant forces, gradually replacing smaller, less efficient carriers. The old canallers, built to navigate in the now extinct St. Lawrence canals, have all but vanished, unable to compete with much larger lakera which, with the Seaway, were able to navigate all the way to the Atlantic.

The small ocean vessels, which once plied the Lachine, Cornwall, Galop and other canals, were first elongated by addition of new mid-sections, then superseded by *Liberty* and *Victory* ships which are now themselves obsolete. The new generation of vessels have, for the most part, been constructed to optimum size to suit Seaway lock dimensions. The most typical and most efficient of these is the big bulk carrier, widely referred to as a "laker" and called "730s" by lockmasters and operations staff. There are 38 ships of that size in operation, five of which were launched in 1968, all built in Canadian shipyards.

Even among these ships, launched in the period 1959-68, changes have been made. Self-unloaders are the most recent development, some with unorthodox shapes—but quite efficient—such as the *Canadian Century* and *Canadian Progress* of the Upper Lakes fleet. Others have been built with bow thrusters, stern thrust, or both, such as the *Ralph Misener* and the *Ottercliffe Hall*. And new package freighters have appeared to compete in a highly competitive trade.

Ocean vessels have also changed, the trend now swinging toward large dual-purpose bulk and general cargo carriers such as the *Rolvi* and the *Nanfri*, both of Norwegian registry, and both 709 feet in length. These vessels and others like the *Federal Scholde* and the *Federal St. Laurent*, which have entered the Seaway in the past two years, have been specifically designed for Seaway service. They usually carry steel imports to Great Lakes ports, returning with grain, some containers and, occasionally, with scrap metals. Today more than 30 nations, including Japan, Thailand, Switzerland, Taiwan and the Soviet Union, use the waterway.

The trend in Seaway shipping has been unmistakably toward larger and larger ships, carrying more and more cargo. In 1960, the average laker had a gross registered tonnage of less than 3,400 tons and carried an average cargo of approximately 3,100 tons. In the same year, the typical ocean ship had a gross registered tonnage of approximately 5,300 tons and carried about 3,600 tons of cargo per transit. By 1967, the change was remarkable. Lake vessels had more than doubled in average size, to 7,450 gross registered tons, carrying more than twice the payload, at 8,100 tons; ocean vessels had increased in size to an average of 7,000 gross registered tons with cargoes of 5,300 tons per transit. The growth in size and capacity of ships has been even more impressive in the Welland. This evolution in the size of ships operating in the Seaway has been stimulated by economics, especially in respect to considerations such as the productivity of crews and rising operating costs. The Seaway itself has benefited by this development—the capacity of the system has increased despite a reduction in the number of vessels. In 1959, it required 7,930 transits in the Montreal-Lake Ontario section and 7,966 in the Welland to move less than half the tonnage carried in 1968, when 6,576 transits were recorded in the St. Lawrence and 7,203 through the Welland. The ratio of lakers to ocean vessels has remained relatively constant over the years, approximating three to two in the Montreal-Lake Ontario section and three to one in the Welland, with lakers dominating.

The Future

The task of providing safe, efficient and economic service to the users of the Seaway, of reducing as much as possible vessel transit times through the system and, above all, of ensuring that sufficient capacity is always available to handle the traffic that presents itself, has raised many problems in the past ten years and will, undoubtedly, raise more in the future. In order to meet these problems as expeditiously as possible, the Authority has developed a planning program which envisages the Seaway system from both the short-term and the long-term view. Most immediate is the task of employing the basic facilities already in place—the Welland section which was completed in 1932 and the Montreal-Lake Ontario section opened in 1959—to the optimum. The key elements in this program are an integrated traffic control system, a more efficient technique for handling vessels in the lock chambers, and an extension of the navigation season, all improvements planned to provide benefits in terms of service to shipping that will far outweigh their costs and extend significantly the life of the present waterway. From the long-term point of view, the Seaway entities cannot ignore the possibility that existing

facilities, no matter how efficiently used, will eventually reach a point when they can no longer cope with the demands made upon them. If historical trends alone are considered, it would appear that Seaway traffic would reach the limits of the present system's capacity before the end of the next decade—leaving scarcely enough time to construct new facilities even if begun immediately. Recent analyses of this traffic by both Canadian and United States economists, however, suggest that the growth rate characteristic of the Seaway's development period may be expected to level off and that sufficient time should be available to thoroughly plan for any new system that eventually may be required. It was with this eventuality in mind that the Authority, in 1967, proposed a long-term expansion program for the Seaway involving, among other things, locks of larger than present dimensions. This proposal is under study by the Federal Government and certain preliminary steps, such as funds for planning and for the acquisition of lands, have been authorized. A final decision to go ahead with such an expansion program will, of course, have to be taken in the light of traffic developments over the next few years and with reference to the success of current plans to utilize the existing facilities to their utmost capacity.

Thus, against a background of a decade of successful development and with a planning program that looks to the future, the Seaway should continue to be a viable avenue of commerce and an integral part of the Canadian and North American transportation network.

Seaway Traffic.—Tables 13 and 14 give combined traffic statistics of the St. Lawrence and Welland Canals for the years 1967 and 1968. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway.

13.—Summary Statistics of St. Lawrence Seaway Traffic, 1967 and 1968

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Item	Upbound				Downbound			
	1967		1968		1967		1968	
	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons
Type of Vessel								
Ocean—								
Cargo.....	1,194	5,362,986	1,128	7,382,576	1,187	7,100,615	1,117	7,046,793
Tanker.....	81	740,519	66	597,327	84	318,790	67	246,510
Laker—								
Cargo.....	2,303	20,592,545	2,343	22,435,706	2,365	23,165,145	2,380	24,753,692
Tug and barge.....	185	179,465	138	232,740	218	356,497	162	273,131
Tanker.....	590	2,450,483	607	2,665,038	583	656,411	611	768,057
Other craft ¹	405	—	273	—	408	—	293	—
Totals.....	4,758	29,325,998	4,555	33,313,387	4,845	31,597,458	4,630	33,088,183
Type of Cargo								
Bulk.....	2,043	24,048,691	2,177	25,884,934	2,431	28,347,370	2,461	30,827,795
General.....	893	4,283,271	888	6,253,594	97	182,699	109	219,004
Mixed.....	377	994,036	333	1,174,859	726	3,067,389	533	2,041,384
Passenger ²	54	—	—	—	60	—	—	—
In Ballast—								
Ocean.....	85	—	34	—	93	—	141	—
Laker.....	920	—	850	—	1,033	—	1,093	—
Other.....	388	—	273	—	405	—	293	—

¹ Includes naval vessels.

² Upbound passengers in all types of vessel numbered 7,538 and downbound 7,895 in 1967; in 1968 the figures were 7,410 and 7,691, respectively.

13.—Summary Statistics of St. Lawrence Seaway Traffic, 1967 and 1968—concluded

Item	Upbound				Downbound			
	1967		1968		1967		1968	
	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons	No. of Transits	Cargo Tons
Type of Traffic								
Domestic—								
Canada to Canada.....	1,510	8,097,927	1,428	7,641,516	1,796	9,037,971	1,655	8,384,958
Canada to United States.....	1,626	14,750,795	1,663	17,347,776	17	56,593	14	28,467
United States to Canada.....	10	74,170	10	22,106	1,397	14,322,573	1,488	16,793,687
United States to United States.....	333	288,771	258	312,520	359	769,692	288	610,904
Foreign—								
Canada—								
Import.....	246	1,071,680	203	995,876	—	—	—	—
Export.....	—	—	—	—	302	1,300,261	230	749,330
United States—								
Import.....	1,033	5,042,655	993	6,993,593	—	—	—	—
Export.....	—	—	—	—	974	6,110,368	955	6,520,837

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1966-68

(Combined traffic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

Commodity	1966		1967		1968	
	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total
Agricultural Products.....	22,092,223	33.0	15,563,298	25.5	14,958,798	22.5
Wheat.....	12,172,173	18.2	7,573,514	12.4	7,146,996	10.8
Corn.....	3,669,283	5.5	2,294,174	3.8	3,414,333	5.1
Rye.....	251,919	0.4	153,840	0.3	103,501	0.1
Oats.....	808,648	1.2	519,920	0.9	299,778	0.5
Barley.....	1,482,556	2.2	1,617,820	2.6	711,936	1.1
Flour, wheat.....	164,850	0.2	90,358	0.1	117,538	0.2
Flour, edible, other.....	18,218	--	24,911	--	9,003	--
Soybeans.....	1,666,589	2.5	1,388,433	2.3	1,717,384	2.6
Soybean oil, cake and meal.....	408,258	0.6	565,898	0.9	187,631	0.3
Beans and peas.....	204,864	0.3	107,013	0.2	98,086	0.1
Malt.....	109,583	0.2	115,664	0.2	97,550	0.1
Flaxseed.....	545,300	0.8	432,570	0.7	353,970	0.5
Other agricultural products.....	589,982	0.9	679,183	1.1	701,092	1.1
Animal Products.....	388,769	0.6	401,131	0.6	366,488	0.6
Packing house products, edible.....	97,976	0.2	76,409	0.1	68,478	0.1
Hides, skins and pelts.....	88,203	0.1	83,123	0.1	82,928	0.1
Other animal products.....	202,590	0.3	241,599	0.4	215,082	0.4
Mineral Products.....	31,911,611	47.6	32,391,224	53.3	36,028,416	54.3
Bituminous coal.....	8,525,793	12.6	9,483,403	15.6	10,586,944	15.9
Coke.....	239,209	0.4	259,949	0.4	347,031	0.5
Iron ore.....	19,624,222	29.3	19,338,227	31.7	21,815,886	32.1
Aluminum ore and concentrates.....	122,550	0.2	92,466	0.1	100,651	0.2
Clay and bentonite.....	193,790	0.3	215,057	0.4	253,422	0.4
Gravel and sand.....	152,045	0.2	22,817	--	61,599	0.1
Stone, ground or crushed.....	1,422,164	2.1	1,063,833	1.8	1,486,626	2.2
Stone, rough.....	5,135	--	88,758	0.1	16,309	--
Petroleum, crude.....	41,641	0.1	128,385	0.3	122,361	0.2
Salt.....	771,110	1.1	875,370	1.5	1,038,957	1.6
Phosphate rock.....	—	--	27,116	--	—	--
Sulphur.....	50	--	24,121	--	—	--
Other mineral products.....	813,902	1.3	771,722	1.4	699,130	1.1

14.—St. Lawrence Seaway Traffic classified by Type of Cargo, 1966-68—concluded

Commodity	1966		1967		1968	
	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total	Cargo Tons	P.C. of Total
Forest Products.....	402,707	0.6	392,541	0.6	422,327	0.6
Pulpwood.....	288,962	0.4	279,675	0.4	291,102	0.4
Other forest products.....	113,745	0.2	112,866	0.2	131,225	0.2
Manufactures and Miscellaneous.....	11,245,380	16.9	11,590,412	19.0	13,734,509	20.7
Gasoline.....	374,377	0.6	608,817	1.0	563,515	0.8
Fuel oil.....	2,814,311	4.4	2,791,944	4.6	2,905,935	4.4
Lubricating oils and greases.....	232,151	0.3	73,196	0.1	141,745	0.2
Petroleum products, other.....	220,277	0.3	154,634	0.2	135,006	0.2
Rubber, crude, natural and synthetic.....	145,865	0.2	152,469	0.2	166,719	0.3
Chemicals.....	366,534	0.6	394,313	0.6	310,433	0.5
Sodium products.....	136,824	0.2	109,875	0.2	109,505	0.2
Tar, pitch and creosote.....	148,918	0.2	139,597	0.2	138,737	0.2
Pig iron.....	356,656	0.6	250,078	0.4	259,316	0.4
Iron and steel, bars, rods, slabs.....	101,842	0.2	102,525	0.2	131,027	0.2
Iron and steel, nails, wire.....	139,510	0.2	108,248	0.2	164,177	0.2
Iron and steel, manufactured.....	2,836,517	4.4	3,294,069	5.5	5,191,857	7.8
Machinery and machines.....	105,422	0.2	108,461	0.2	136,326	0.2
Cement.....	138,218	0.2	93,393	0.1	40,376	0.1
Wood pulp.....	52,144	0.1	57,453	0.1	62,317	0.1
Newsprint.....	595,235	0.9	472,903	0.8	356,868	0.5
Syrup and molasses.....	122,150	0.2	132,893	0.2	143,168	0.2
Sugar.....	197,588	0.3	168,546	0.3	184,815	0.3
Food products.....	192,642	0.3	309,355	0.5	364,016	0.5
Scrap iron and steel.....	177,169	0.3	460,196	0.7	436,348	0.7
Other manufactures and miscellaneous.....	1,791,030	2.2	1,607,447	2.7	1,792,303	2.7
Package Freight.....	899,747	1.3	584,850	1.0	891,032	1.3
Package freight—domestic.....	869,454	1.3	559,553	1.0	888,286	1.3
Package freight—foreign.....	30,293	--	25,297	--	22,746	--
Totals.....	66,940,437	100.0	60,923,456	100.0	66,401,570	100.0

In 1968, 4,555 ships carrying about 33,313,000 tons of cargo moved upbound through the Seaway and 4,630 vessels carrying 33,038,000 tons moved downbound. Ocean-going ships carried 23.0 p.c. of the total cargoes and lakers 77.0 p.c. Of the total tonnage carried upbound in 1968, 25,324,000 tons were domestic cargo and 7,989,000 tons were foreign traffic; downbound, 25,818,000 tons were domestic freight and 7,270,000 tons were carried to and from foreign ports.

On the Montreal-Lake Ontario section, upbound traffic amounted to 30,400 000 tons in 1968 and downbound traffic to 17,600,000 tons, an increase of 9.0 p.c. over 1967. Almost 60 p.c. of the former was accounted for by iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie, and the latter largely by overseas shipments of wheat. There were 176 fewer upbound transits and 169 fewer downbound transits in 1968 than in 1967, indicating a slight decrease in the number of vessels using this portion of the Seaway. Bulk cargo comprised 80.1 p.c. of the total traffic through the Section in 1968, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, soybeans and bituminous coal. Traffic patterns show that 26.8 p.c. of the total movement was between Canadian ports, 41.1 p.c. moved between Canadian and United States ports and 31.8 p.c. consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between ports in the United States.

There were 7,204 transits through the Welland Canal in 1968, with a cargo volume of 26,200,000 tons upbound and 31,900,000 tons downbound; bulk cargo accounted for 85.6 p.c. of the traffic. Although many vessels pass through both the St. Lawrence and the Welland Canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely

of iron ore, grain and coal. The Welland Canal traffic was 10,100,000 cargo tons greater than that reported for the Montreal-Lake Ontario section.

Income of the St. Lawrence Seaway Authority for 1968 amounted to \$22,051,023, comprising toll revenue of \$19,896,897 assessed for transits through the Seaway locks between Montreal and Lake Ontario and sundry revenues (rentals, wharfage, bridge revenue, etc.) of \$2,154,126. Total expenses for 1968 amounted to \$16,743,334, of which operation and maintenance expenses amounted to \$11,805,202 and regional headquarters, headquarters administration and engineering expenses amounted to \$4,234,913, and construction \$703,219.

Subsection 5.—Marine Services of the Federal Government

The Marine Services of the Department of Transport comprises four Branches—Marine Works, Marine Regulations, Marine Operations, and Marine Hydraulics—each headed by a director responsible to the Assistant Deputy Minister, Marine.

The *Marine Works Branch* responsibilities include provision and maintenance of aids to navigation, maintenance and management of Canada's secondary canals, administration of public harbours and wharves, and general supervision of harbour commissions. It has three Divisions—Aids to Navigation, Canals, and Harbours and Property.

The *Marine Regulations Branch*, with three Divisions—Ships Machinery Inspection, Hulls and Equipment Inspection, and Nautical and Pilotage—is responsible for the administration of those parts of the Canada Shipping Act that relate to the operations of Canadian ships and ships within Canadian waters. It is charged with the registry and licensing of ships, the certification of ships' officers and the engagement and discharge of ships' crews. Other responsibilities include pilotage, safety inspection of ships, handling of dangerous cargoes, prevention of oil pollution of Canadian waterways and air pollution by ships, and the investigation of marine accidents. It is also responsible for the co-ordination of Canada's participation in the Intergovernmental Maritime Consultative Organization, a United Nations body charged with the promotion of marine safety on an international basis.

The *Marine Operations Branch* is responsible for operating the departmental fleet, the Canadian Coast Guard, which consists of 146 ships of various types including both heavy and light icebreakers, an icebreaking cable repair ship, a special Arctic service ship, and two weather-oceanographic ships, the CCGS *Vancouver* and CCGS *Quadra*, which alternate in manning Weather Station "Papa" in the Pacific Ocean.

A principal duty of the fleet is tending lighthouses, buoys and other aids to navigation in Canadian coastal and inland waters. Coast Guard ships, including icebreakers, take part each summer in the Department's Arctic re-supply operations, moving some 100,000 tons of cargo to more than 40 ports of call in the Far North. These ships work in conjunction with a number of chartered commercial vessels which carry most of the cargo. During the winter, the icebreakers operate in support of commercial shipping in the Gulf of St. Lawrence from Cabot Strait to the Quebec North Shore. They also operate in the St. Lawrence River to break ice jams and prevent flooding, particularly in the section between Trois-Rivières and Montreal.

The Coast Guard ships assist with projects of other Canadian Government departments, such as scientific programs carried out by research teams based aboard various ships ranging from the Great Lakes to the High Arctic in such fields as oceanography, hydrography and related sciences. Departments concerned with the development of the Canadian Arctic and with the welfare of its population also carry out their undertakings with the aid of Coast Guard ships.

A Canadian Coast Guard Officer Training College, officially opened in September 1966 at Sydney, N.S., provides a four-year course for students, who will graduate as

junior engine-room or deck officers. Upon acquiring the necessary sea experience, they may take the examinations to earn the rank of engineer first-class or master foreign-going, respectively.

The *Marine Hydraulics Branch* comprises three Divisions—Marine Hydraulics, the St. Lawrence Ship Channel, and Marine Traffic Control. Marine Hydraulics deals with the hydraulic and engineering aspects of providing navigable channels for marine transportation on the Great Lakes and the St. Lawrence River. Maintenance and improvements of the St. Lawrence River below Montreal and of the Saguenay River are under the jurisdiction of the St. Lawrence Ship Channel Division, which is located in Montreal.

In the interests of St. Lawrence River traffic safety, a Marine Traffic Control Service was established on Apr. 3, 1967, as a result of studies initiated by the Department in 1964. Using very high frequency (VHF) radio equipment, the service keeps track of ship traffic in much the same way as the air traffic controllers watch over the busy sky lanes. The information needed to assist ships' masters in the safe conduct of their vessels comes from two main traffic control centres—one at Quebec and the other at Montreal—six shore stations and 18 reporting points along the river between Montreal and Les Escoumins, Que. All ships navigating the river must be equipped with the required VHF equipment to take advantage of the service.

Field Organization.—In the field, a regional management organization within the Marine Services is being developed. This system will provide the Department with more efficient means of matching resources to workloads in all areas. Included in the completed system will be the 11 district marine agencies that have existed for many years, and some 15 other Marine Services field offices that in the past have been reporting individually to Marine Services directors or to the Assistant Deputy Minister, Marine.

The first step was completed in May 1967 with the establishment of the Maritime Region. This covers the Maritime Provinces and their outlying islands including Sable Island and the Magdalen Islands, and embraces the Steamship Inspection Service and Nautical and Pilotage offices in the three provinces. In all, there will be five regions, each under a regional director. The other four will be Newfoundland Region; Laurentian Region, including Quebec, Hudson Bay and Eastern Arctic waters; Lakes Region, including Ontario and Manitoba inland waters; and Western Region, including the Pacific Coast, western and northwestern Canadian waterways and the Western Arctic.

Aids to Navigation.—The Canadian system of aids to navigation is similar to that of other North American countries. Such aids maintained by the Department of Transport for Canadian and contiguous waters consist of buoys, lightships, lighthouses, day beacons, radio beacons and two electronic networks operating on the hyperbolic principle—Loran and Decca. The numbers of danger signals maintained during the years ended Mar. 31, 1967 and 1968 were:—

<i>Type of Signal</i>	<i>1966-67</i>	<i>1967-68</i>	<i>Type of Signal</i>	<i>1966-67</i>	<i>1967-68</i>
No.	No.		No.	No.	
Lights.....	3,618	3,757	Lighted and combination		
Lightships.....	2	1	lighted whistling and		
Light-keepers.....	882	716	bell buoys.....	1,821	2,199
Fog whistles and sirens....	67	61	Unlighted bell and whis-		
Diaphones and tyfons....	275	274	tling buoys.....	27	—
Mechanical bells and gongs	12	9	Electronic signals.....	21	31
Hand fog horns and bells..	68	15	Unlighted beacons and		
			buoys.....	13,068	13,448

All aids incorporating light or sound devices are listed in the Department of Transport annual publication *List of Lights and Fog Signals*. Information on the radio beacons and on Loran and Decca is published in *Radio Aids to Marine Navigation*.

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels.

St. Lawrence Ship Channel.—This channel extends from about 40 miles below Quebec City to the foot of the Lachine Canal at Montreal, a distance of 200 miles. About 130 miles of this distance is dredged channel.

Above Quebec, in the Quebec-Trois-Rivières reach, the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 800 feet. The channel on Lake St. Peter has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet. This reach is being improved and widened to a minimum width of 800 feet, and is expected to be completed during 1970.

From Lake St. Peter to Montreal the limiting depth of the channel is 35 feet at extreme low water and a minimum width of 800 feet.

Below Quebec the limiting depth of dredged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The Ship Channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early December. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway are made available through the Marine Traffic Control Service (see p. 849).

Steamship Inspection.—The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the formulation and subsequent enforcement of regulations concerned with the approval of design of hulls, machinery and equipment of ships; inspection during construction; periodic inspection and issuance of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; control of pollution of the atmosphere by smoke emitted by ships; control of the powering, equipment and load limits of small vessels; and the certification of marine engineers. The Board also prepares correspondence courses in marine engineering for use in Marine Engineering Schools now controlled by the Department of Labour.

The Chairman and the Board of Steamship Inspection are located at Ottawa and field offices are maintained in the principal ocean and inland ports. A total of 1,869 vessels of Canadian ownership or registry, including 454 passenger ships, 182 new ships built in Canada, 14 ships built outside Canada for registry in Canada, and 19 converted or reconditioned ships were inspected during the year ended Mar. 31, 1968.

Pilotage.—Pilotage service functions under the provisions of Part VI and Part VIa of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 25 pilotage districts, in nine of which the Minister of Transport is the pilotage authority (see Table 15); in each of the other districts the authority is a local body appointed by the Governor in Council. There are also three districts that are administered jointly by Canada and the United States; and one area in which the Department of Transport provides qualified pilots.

15.—Pilotage Service, by Pilotage District, 1966 and 1967

District	1966		1967	
	Pilotage Trips	Net Registered Tonnage	Pilotage Trips	Net Registered Tonnage
	No.		No.	
Bras d'Or Lakes, N.S.....	283	581,131	221	507,285
Sydney, N.S.....	2,236	9,182,655	470	1,391,489
Halifax, N.S.....	3,662	16,282,010	3,363	15,454,974
Saint John, N.B.....	1,454	6,266,928	780	5,602,831
Quebec, Que.....	8,903	49,413,904	8,579	49,345,616
Montreal, Que.....	10,089	57,702,251	10,200	53,065,118
Cornwall, Ont.....	3,073	12,444,102	2,856	11,613,808
Churchill, Man.....	94	692,922	88	492,149
British Columbia.....	9,284	37,740,585	9,208	41,558,348
Totals.....	39,078	190,306,488	35,765	179,031,618

Section 2.—Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government, that by municipalities and private industry being confined almost entirely to terminal or dockage facilities.

The figures available of federal capital expenditure on waterways are contained in the *Public Accounts* and the annual reports of the Departments of Transport, Public Works and Finance and in the annual report of the St. Lawrence Seaway Authority. However, for several reasons, these figures cannot be regarded as an accurate indication of the present worth of the undertakings represented and therefore are not included here; the one exception is the capital expenditure made by the National Harbours Board on facilities under its jurisdiction. The capital values of the fixed assets administered by the Board at Dec. 31, 1967 amounted to \$498,313,011; this figure includes expenditure on all buildings, machinery and durable plant improvements less deductions for depreciation and the scrapping or abandonment of plant, and therefore represents a fair approximation of the present value of the properties. The total amount advanced by the Federal Government to the National Harbours Board for capital expenditure during 1967 was \$16,974,491, distributed as follows: Champlain Bridge (Montreal), \$1,897,854; Montreal, \$2,525,691; Belledune (N.B.), \$2,284,669; Vancouver, \$6,588,120; Quebec, \$2,437,187; Churchill, \$359,840; and Saint John (N.B.), \$881,130.

Waterways Expenditure and Revenue.—Expenditure under this heading (Tables 16 to 18) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport, the Department of Public Works and the St. Lawrence Seaway Authority is shown in Table 19.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 21. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 20.

16.—Department of Transport Expenditures on Marine Service, Years Ended Mar. 31, 1966 and 1967

Service	1966	1967
	\$	\$
Administration, including agencies.....	1,397,002	1,756,145
Marine Works Branch—		
Aids to Navigation Division—		
Administration, operation and maintenance.....	8,420,009	8,986,803
Construction.....	6,121,227	9,182,186
Canals Division—		
Administration, operation and maintenance.....	3,701,925	3,151,868
Construction.....	4,798,798	6,094,668
Marine Hydraulics Branch—		
Ship Channel Service—		
Administration, operation and maintenance of St. Lawrence and Saguenay Rivers.....	1,493,696	1,887,575
Construction.....	4,438,575	5,649,861
Marine Regulations Branch—		
Steamship Inspection Division.....	1,785,197	2,203,772
Nautical and Pilotage Division—		
Nautical Services.....	577,064	656,010
Pilotage Services—		
Administration, operation and maintenance.....	2,060,262	2,331,010
Pensions to former pilots.....	1,200	958
Marine reporting service.....	129,189	111,068
Construction.....	593,013	1,623,892
Marine Operations Branch—		
Administration, operation and maintenance.....	25,075,514	29,562,513
Totals.....	60,592,671	73,198,329

17.—Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges), Years Ended Mar. 31, 1966 and 1967

NOTE.—Compiled from the annual reports of the Department concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 20.

Year and Province or Territory	Dredging ¹	Construction and Improvements	Repairs and Upkeep	Staff and Sundries	Total
	\$	\$	\$	\$	\$
1966					
Newfoundland.....	451,847	4,300,255	590,104	36,045	5,378,251
Prince Edward Island.....	318,817	788,328	235,861	42,581	1,385,587
Nova Scotia.....	78,883	4,572,285	574,616	2,222	5,228,016
New Brunswick.....	139,370	3,740,176	355,415	77,626	4,312,587
Quebec.....	383,907	6,368,673	953,761	520,470	8,224,811
Ontario.....	—	4,931,448	526,948	66,384	5,514,780
Manitoba.....	239,973	45,197	97,249	175,971	558,390
Saskatchewan.....	—	61	—	—	61
Alberta.....	301,831	8,213	40,904	195,924	546,872
British Columbia.....	806,785	2,470,196	462,469	400,371	4,139,821
Yukon and Northwest Territories.....	—	100,061	9,827	—	109,888
Canada, 1966.....	2,721,413	27,322,903	3,847,154	1,507,594	35,399,064
1967					
Newfoundland.....	432,315	5,238,106	780,339	87,148	6,537,908
Prince Edward Island.....	330,338	682,527	196,854	14,175	1,223,894
Nova Scotia.....	74,801	3,798,392	455,968	2,923	4,332,084
New Brunswick.....	178,017	4,804,952	302,817	49,600	5,335,386
Quebec.....	438,447	5,507,338	1,046,369	508,935	7,501,089
Ontario.....	—	6,316,560	548,230	32,277	6,897,067
Manitoba.....	264,530	88,334	88,519	81,596	522,979
Saskatchewan.....	—	—	—	—	—
Alberta.....	318,289	12,121	12,378	—	342,788
British Columbia.....	789,121	3,490,689	494,501	371,137	5,145,448
Yukon and Northwest Territories.....	—	155,691	2,524	57,931	216,146
Canada, 1967.....	2,825,858	30,094,710	3,928,499	1,205,722	38,054,789

¹ Includes expenditures for dredging plants.

18.—St. Lawrence Seaway Authority Expenditures, 1966-68

Item	1966	1967	1968
	\$	\$	\$
Administration—			
Headquarters.....	1,272,775	1,583,978	1,850,183
Regional.....	1,426,065	1,565,116	1,645,015
Engineering.....	538,406	788,132	1,171,734
Construction Branch.....	—	197,564	703,219
Operation and Maintenance—			
Salaries and wages.....	5,883,554	6,132,316	6,228,868
Employee benefits.....	632,612	703,651	659,806
Maintenance materials and services.....	4,704,574	3,420,826	3,765,857
Grants in lieu of municipal taxes.....	488,664	530,695	597,697
Other operation and maintenance expenses.....	551,475	319,857	120,955
Totals.....	15,498,125	15,242,135	16,743,334

19.—Federal Government Revenue in connection with Waterways, Years Ended Mar. 31, 1966 and 1967

Note.—Compiled from annual reports of the Department of Transport, the *Public Accounts* and the annual reports of the St. Lawrence Seaway Authority.

Department and Item	1966	1967	Department and Item	1966	1967
	\$	\$		\$	\$
Department of Transport			Department of Public Works		
Marine Services	6,541,260	7,623,938	Earnings of Dry Docks	459,117	457,294
Canals.....	420,536	388,205	Champlain Dock, Lauzon....	198,542	161,738
Fines and forfeitures.....	3,242	3,895	Lorne Dock, Lauzon.....	48,236	43,830
Steamship inspection.....	246,255	246,378	Esquimalt new dock.....	211,298	251,726
Wharf revenue.....	1,418,537	1,511,213	Selkirk repair slip.....	1,041	—
Harbour dues.....	437,305	469,855	Works and Plants Leased	81,592	54,653
Measuring surveyors' fees.....	2,742	3,929	Kingston dry dock.....	12,100	12,100
Examinations—masters' and mates' fees.....	16,994	28,795	Ferry privileges.....	363	385
Pilots' licence fees (pilotage).....	885	225	Dredges and plants.....	69,129	42,168
Pilotage fees.....	785,858	760,402	Rents from water lots, etc....	142,132	108,962
Pilot boat fees.....	288,253	293,805	Refunds of expenditure reported in previous years.....	103,286	530,309
Shipping masters' fees.....	11,945	13,933	Sundry receipts, test borings, etc.....	4,814	12,497
Marine steamer earnings.....	2,334,939	3,391,126	Totals, Department of Public Works	790,941	1,163,715
Rentals—water lots and lighthouse sites.....	79,138	84,029	St. Lawrence Seaway Authority	Calendar Year	Calendar Year
Sale of land, buildings, etc....	19,612	2,149	Tolls assessed.....	17,281,526	17,282,152
Merchant seamen's identity certificates.....	739	929	Rentals.....	604,758	719,576
Miscellaneous.....	140,958	180,151	Wharfage.....	311,663	239,485
Refunds, previous year's expenditures.....	256,881	168,539	Miscellaneous.....	1,198,171	1,143,549
Port warden fees.....	76,381	76,380	Totals, St. Lawrence Seaway Authority	19,396,118	19,384,762
Canadian Transport Commission					
Railway Transport Committee.....	2,044	1,712			
Totals, Department of Transport	6,543,244	7,625,650			

**20.—Operating Revenue and Expenditure of Harbours, Elevators and Bridges
under the National Harbours Board, 1966 and 1967**

Harbour and Year	Operating Revenue	Operating Expend- iture	Net Operating Income	Harbour and Year	Operating Revenue	Operating Expend- iture	Net Operating Income
	\$	\$	\$		\$	\$	\$
St. John's, Nfld.—				Jacques Cartier Bridge (Montreal)—			
1966.....	327,185	258,058	69,127	1966.....	129,724	1,685,334	-1,555,610
1967.....	299,895	318,411	-18,516	1967.....	129,313	839,781	-710,468
Halifax—				Champlain Bridge (Montreal)—			
1966.....	2,713,317	3,137,215	-423,898	1966.....	1,329,190	898,898	430,292
1967.....	2,643,411	3,220,449	-577,038	1967.....	2,066,771	1,213,546	853,225
Saint John—				Prescott Elevator—			
1966.....	1,190,021	1,631,171	-441,150	1966.....	936,192	603,163	333,029
1967.....	938,382	1,719,604	-781,222	1967.....	786,418	637,239	149,179
Chicoutimi—				Port Colborne Elevator—			
1966.....	179,874	81,236	98,638	1966.....	448,179	374,312	73,867
1967.....	190,730	92,574	98,156	1967.....	390,652	371,335	19,317
Quebec—				Churchill—			
1966.....	4,015,905	3,793,444	222,461	1966.....	1,257,028	1,371,068	-114,040
1967.....	3,144,024	3,687,973	-543,949	1967.....	1,490,458	1,541,891	-51,433
Trois-Rivières—				Vancouver—			
1966.....	975,302	328,302	647,000	1966.....	6,522,025	5,340,743	1,181,282
1967.....	817,724	375,537	442,187	1967.....	7,083,939	6,621,077	462,862
Montreal—							
1966.....	16,994,397	13,004,216	3,990,181				
1967.....	16,044,090	13,957,797	2,086,293				

Shipping Subsidies.—Table 21 shows the net amount of steamship subventions paid in connection with contracts made for the maintenance of essential coastal and inland water shipping services. The payment of these subventions is administered by the Canadian Transport Commission.

21.—Steamship Subventions, Years Ended Mar. 31, 1967 and 1968

Service	1967	1968
	\$	\$
Western Local Services—		
Gold River and Zeballos, B.C.....	24,000	28,940
Vancouver and northern British Columbia ports.....	227,914	270,000
Vancouver and west coast of Vancouver Island, B.C.....	88,000	128,666
Eastern Local Services—		
Burnside and St. Brendans, Nfld.....	10,000	14,500
Carmanville and Pogo Island, Nfld.....	21,000	27,500
Cobb's Arm and Change Islands, Nfld.....	—	17,500
Dalhousie, N.B., and Miguasha, Que.....	—	37,500
Grand Manan and the mainland, N.B.....	272,067	259,000
Greenspond and Badger's Quay, Nfld.....	—	53,750
Halifax, N.S., and Cupids, Nfld.....	25,000	40,000
Halifax, N.S., and St. John's, Nfld.....	239,571	263,639
Île aux Coudres and Les Éboulements, Que.....	33,000	35,900
Île aux Grues and Montmagny, Que. (summer).....	6,500	6,500
Île aux Grues and Montmagny, Que. (winter).....	1,700	1,700
Îles de la Madeleine, Que., Cheticamp and Halifax, N.S.....	35,000	35,000
Îles de la Madeleine and Montreal, Que.....	100,000	100,000
Montreal, Que., and Botwood, Nfld.....	75,000	95,600
Montreal, Quebec, Rimouski and north shore ports to Blanc Sablon, Que.....	—	770,000
Mulgrave, Queensport and Isle Madame, N.S.....	2,604	—
Mulgrave, Canso and Arichat, N.S.....	52,400	52,400
Newfoundland Coastal Steamship Services.....	6,885,749	6,829,914

21.—Steamship Subventions, Years Ended Mar. 31, 1967 and 1968—concluded

Service	1967	1968
	\$	\$
Eastern Local Services—concluded		
Owen Sound and Manitoulin Island, Ont.....	154,143	185,700
Pelee Island and the mainland, Ont.....	78,695	87,342
Pictou, N.S., Charlottetown (Souris) P.E.I. and Îles de la Madeleine, Que.....	278,000	304,160
Portugal Cove and Bell Island, Nfld.....	270,616	267,925
Prince Edward Island and Newfoundland.....	82,900	108,600
Prince Edward Island and north shore of St. Lawrence River, Que.....	35,000	35,000
Prince Edward Island and Nova Scotia.....	830,960	822,621
Quebec, Natashquan and Blanc Sablon, Que.....	430,000	—
Rimouski and north shore ports to Blanc Sablon, Que.....	200,000	—
Rivière du Loup and St. Siméon, Que.....	21,000	21,000
St. Lawrence River and Gaspé ports to Chandler, Que.....	43,000	43,000
Sorel and Île St. Ignace, Que.....	43,000	43,000
Trois Pistoles and Les Escoumains, Que.....	5,000	—
Twillingate and New World Island, Nfld.....	50,736	63,400
Yarmouth, N.S., and Rockland, Me., U.S.A.....	10,650	—
Totals.....	10,723,205	11,049,757

PART IV.—CIVIL AIR TRANSPORT

Section 1.—Civil Aviation Administration and Policy

Administration.—Civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act and the National Transportation Act and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the economic aspects of commercial air services and assigns to the Canadian Transport Commission certain regulatory functions of commercial air services (see p. 876). Part III deals with matters of government internal administration in connection with the Act.

International Air Agreements.—The position of Canada in the field of aviation as well as its geographical location makes co-operation with other nations of the world engaged in international civil aviation imperative. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization (ICAO) which has headquarters at Montreal, Que. At present, Canada has air agreements with 25 other countries.

Federal Civil Aviation Policy.—The intent of Federal Government concern in civil aviation is to provide an efficient and stable service for the Canadian public and the best possible economic framework for the orderly development of commercial aviation. In formulating its aviation policy in 1964, three principles were accepted by the Government as basic. The first related to the international field and stated that air services provided by Canadian airlines should serve the Canadian interest as a whole; that these services should not be competitive or conflicting but should represent a single integrated plan which could be achieved by amalgamation, by partnership or by a clear division of fields of operations.

By a further policy statement in June 1965, the Minister of Transport defined more precisely the respective areas of operation of Air Canada and Canadian Pacific Air Lines Limited (CP Air) and additional international air services have since been introduced consistent with Government policy.

The second principle concerned the domestic mainline services and stated that, although competition was not to be rejected, development of competition should not compromise or seriously injure the economic viability of Air Canada's domestic operations which represent the essential framework of its network of domestic services, and in the event that competition continues, opportunity should be ensured for growth to both lines above this basic minimum. In accordance with this principle, the Government has authorized the Canadian Transport Commission to permit CP Air to operate additional transcontinental air services, and to serve Calgary, Edmonton and Ottawa in addition to Vancouver, Winnipeg, Toronto and Montreal which were already being served.

The third principle concerned the role of regional air carriers providing scheduled service and their relationship with the mainline carriers. Recommendations were prepared by the two major airlines and the larger regional carriers which resulted in a "Statement of Principles for Regional Air Carriers" tabled in the House of Commons on Oct. 20, 1966, by the Minister of Transport. These principles are summarized as follows:—

- (1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CP Air; they will be limited to a regional role.
- (2) Greater scope will be allowed regional carriers in the development of routes and services by the following means: (a) where appropriate, limited competition on mainline route segments of Air Canada or CP Air may be permitted to regional carriers if this is consistent with their local route development; (b) in a few cases, secondary routes at present operated by Air Canada and CP Air may become eligible for transfer to regional carriers; and (c) a larger role will be allotted to regional carriers in connection with the development of domestic and international charter services, inclusive tours and new types of services.
- (3) Greater co-operation between the mainline carriers and the regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint fare arrangements.
- (4) A limited policy of temporary subsidies for regional routes will be introduced, to be based upon a "use it or lose it" formula.
- (5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements.
- (6) Regional carriers will be assisted with the acquisition of aircraft by development of a scheme for consultation between government and the carriers regarding plans for new aircraft, and by a special investigation designed to explore the possibility of developing a joint approach to this problem on the part of the carriers.

To implement the above principles, the Air Transport Board (now the Canadian Transport Commission acting through its Air Transport Committee) introduced during the year the following measures:—

- (1) Provision for the carriage of two pro-rata charter groups on any pro-rata charter flight, provided that each group is composed of not less than 40 persons;
- (2) Provision for the operation of domestic and international inclusive tours with chartered aircraft; and
- (3) Provision for the operation by regional air carriers of entity and pro-rata affinity group passenger charters between mainline points, subject to certain restrictions.

Thus, in the international field, the joint approach to the provision of world-wide service by the two major Canadian carriers is intended to strengthen their position in a very competitive field and provide a better over-all service to the travelling public. In the domestic field, a degree of competition remains to provide the public with the advantages that can result from a competitive atmosphere but avoids excesses of competition that could be ruinous to the operators and unsatisfactory to the public.

Section 2.—Current Air Services

Two major airlines, Air Canada and CP Air, form the nucleus of Canada's freight and passenger air service. Current operations of these airlines are discussed briefly below, followed by short outlines of the services provided by independent airlines and a list of Commonwealth and foreign air carriers licensed to operate services into Canada.

Broadly, air transport services in Canada may be grouped into two classes—Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:—

- (1) Regular Specific Point Air Services—operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit.
- (2) Irregular Specific Point Air Services—operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft from a designated base, serving a defined area or a specific point or points, at a toll per unit.
- (3) Charter Air Services—operated by air carriers that offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Committee.
- (4) Contract Air Services—operated by air carriers that do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.
- (5) Flying Clubs—operated by air carriers incorporated as non-profit organizations for the purpose of furnishing flying training and recreational flying to club members.
- (6) Specialty Services—operated by air carriers for purposes not provided for by any other class, such as flying training, recreational flying, aerial photography and survey, aerial application and distribution (crop dusting, pest control, seeding), aerial inspection (forests, fire patrol, pipelines), aerial control (fire, water-bombing) and aerial construction (supply).

Air Canada.—Continued development in all phases of Air Canada's operations, stimulated by Expo 67 and the Pan American games, made 1967 an exceptional year in terms of both traffic and revenues. In that year, the 30th of its operations, Air Canada carried 6,393,124 passengers on scheduled and chartered flights, an increase of 21 p.c. over 1966. Scheduled seat-miles offered numbered 8,054,000,000, up 26 p.c. from 1966, and scheduled revenue passenger-miles flown exceeded 5,221,000,000, an increase of 25 p.c. The passenger-load factor dropped from 66 p.c. in 1966 to 65 p.c. in 1967.

North American passenger-miles flown, which represented almost three quarters of Air Canada's scheduled passenger traffic, increased 26 p.c. over 1966 as additional services were extended to points in the United States as well as to communities in Canada; 3,747,000,000 passenger-miles were flown compared with 2,984,000,000 in 1966. There was a 23-p.c. advance in scheduled transatlantic passenger traffic, and passenger traffic to Florida, Bermuda, the Bahamas and the Caribbean Islands rose by 20 p.c.

Commodity traffic continued to increase, although to a lesser degree due mainly to delays in delivery of new aircraft, air freight rising 15 p.c. to 85,653,000 ton-miles compared with 33 p.c. in the previous year, air express increasing by 8 p.c. to 6,774,000 ton-miles compared with 13 p.c. in 1966, and mail traffic 13 p.c. to 21,529,000 ton-miles.

At the end of 1967, Air Canada, one of the world's largest air carriers, was operating over 68,645 unduplicated route miles, serving 61 communities in Canada, the United States, the British Isles, Continental Europe and the Caribbean. At year-end, its fleet consisted of 21 DC-8s, 18 DC-9s, 23 Vanguards and 39 Viscounts, of which four 196-passenger DC-8-61 and twelve 94-passenger DC-9-32 jetliners were acquired during the year.

1.—Operating Statistics of Air Canada, 1958-67

Year	Traffic				Operating Revenue			Operating Expenses	Operating Profit
	Revenue Passenger ¹		Revenue Commodity ²	Mail	Passenger	Freight and Mail	Totals ³		
	No.	'000 passenger-miles	'000 ton-miles	'000 ton-miles	\$'000	\$'000	\$'000	\$'000	\$'000
1958.....	2,785,523	1,625,689	15,395	10,386	101,553	17,407	120,555	118,041	2,514
1959.....	3,209,197	1,828,902	17,753	10,905	114,339	18,293	134,679	132,265	2,413
1960.....	3,440,303	2,050,600	20,868	11,593	127,596	19,307	148,987	147,934	1,052
1961.....	3,712,068	2,481,122	24,091	11,934	143,301	19,466	165,436	163,292	2,144
1962.....	3,865,408	2,659,578	29,827	12,862	158,792	21,914	183,473	176,078	7,395
1963.....	3,966,547	2,887,239	35,781	13,859	167,653	24,088	199,390	188,122	11,268
1964.....	4,189,349	3,150,956	45,590	15,731	177,091	27,684	213,910	203,527	10,383
1965.....	4,753,395	3,715,635	61,662	17,287	209,926	31,839	250,126	237,401	12,725
1966.....	5,293,561	4,331,583	80,917	19,081	243,877	36,924	289,943	275,990	13,953
1967.....	6,393,124	5,341,223	92,427	21,529	295,553	40,230	345,611	329,731	15,880

¹ Includes non-scheduled service.² Includes excess baggage and express.³ Includes other revenue.

Canadian Pacific Air Lines Limited (CP Air).—In 1968, for the first time, CP Air had revenues exceeding \$100,000,000 and carried more than 1,000,000 passengers.

Formed in 1942, the airline now has 50,780 miles of international routings as a Canadian flag-carrier. CP Air serves Honolulu, Fiji, New Zealand and Australia with its South Pacific service out of system headquarters at Vancouver. The Great Circle Route over the North Pacific to Hong Kong and Japan radiates from Vancouver as does the Polar Route via Calgary and Edmonton to Amsterdam. CP Air, in Eastern Canada from Toronto and Montreal, crosses the Atlantic to Holland, the Azores, Portugal, Spain, Italy and its newest international destination Greece. A South American network operates to Mexico, Peru, Chile and Argentina from Montreal, Toronto and Vancouver, with an anticipated service to Panama. Regular west coast flights link Vancouver with San Francisco.

Within Canada, a transcontinental route, with five daily frequencies, joins Montreal, Ottawa, Toronto, Winnipeg, Calgary, Edmonton and Vancouver. In addition, interior British Columbia, northern Alberta and Yukon routes are flown. CP Air in 1968 pioneered a 50-p.c. standby fare for senior citizens. It offers a similar fare to youths under age 22 and a special hotel accommodation package at CP hotels across Canada.

In 1969, CP Air became an all-jet airline, the fleet consisting of seven standard DC-8s and four elongated "Spacemaster" DC-8-63s, carrying 141 and 199 passengers, respectively, seven Boeing 737s and two Boeing 727s (on order) the latter two types having 99-passenger capacity; the two 727s are slated for delivery in early 1970 and will bring the fleet total to 20.

Independent Airlines.—In addition to the two major Canadian air carriers—Air Canada and CP Air—there are five domestic air carriers licensed to operate scheduled regional commercial air services in Canada, namely, Eastern Provincial Airways (1963) Ltd., Gander, Nfld.; Quebecair, Montreal, Que.; Nordair Ltée—Ltd., Dorval, Que.; Transair Limited, Winnipeg, Man.; and Pacific Western Airlines Ltd., Vancouver, B.C.

As of Dec. 31, 1968, there were 1,428 other carriers licensed to operate in Canada. Of this number, 1,063 were Canadian carriers and 365 were foreign.

Scheduled flights operated by the larger carriers serve major urban centres while non-scheduled services, in addition to providing effective access to areas of Canada that are inaccessible by other means of transportation, act as feeder lines to the intercity routes.

Some carriers provide non-transportation services using aircraft specially equipped for such activities as flying training, aerial photography and survey, water-bombing, crop dusting and spraying, aerial advertising and aerial construction.

Eastern Provincial Airways (1963) Ltd.—This company, officially recognized as air carrier in the Canadian Atlantic region, operates throughout the Maritime Provinces, Newfoundland-Labrador, and Quebec. It serves Charlottetown and Summerside in Prince Edward Island; Moncton and Campbellton-Dalhousie in New Brunswick; New Glasgow and Halifax in Nova Scotia; Deer Lake-Stephenville-Corner Brook, Gander, St. John's, St. Alban's and St. Anthony in Newfoundland; Goose Bay, Saglek, Wabush-Labrador City, and Twin Falls-Churchill Falls in Labrador; and Montreal, Sept Îles, and the Magdalen Islands in Quebec.

Eastern Provincial Airways' mainline fleet consists of three Handley-Page Dart Heralds, one DC-4, two Convairs with combination passenger and cargo configuration, and four DC-3s. Its bushline fleet consists of five PBY Cansos, five DH Beavers, six DH Otters, one DH Twin Turbo Otter, one Beech Baron, two Super Cubs and an assortment of helicopters. The company carries on an extensive air freight service throughout the Atlantic region and conducts many specialty services such as mineral exploration, package trips (hunting and fishing), ambulance service and forestry, seal and ice patrol services, aerial photography, and general charters.

Quebecair.—Quebecair, with head office at Montreal, offers scheduled services in Quebec and Labrador. The company dates from 1946 and was founded under the name "Le Syndicat d'Aviation de Rimouski". In 1957 the name was changed to Rimouski Airlines and the company inaugurated an air transport service between the shores of the Gulf of St. Lawrence, linking Matane, Mont Joli, Rimouski, Forestville, Baie Comeau and Sept Îles. Until 1953 service was limited to towns and small centres located between Rimouski and Gaspé on the south shore of the St. Lawrence River and between Forestville and Sept Îles on the north shore. In 1953 with amalgamation of Gulf Aviation the name "Quebecair" was adopted. With the expansion of mining and industrial activities, it extended its network to Quebec City and Schefferville in 1955, to Montreal in 1957, to Gagnon and Rivière du Loup in 1959, to Wabush in 1960, to Manicouagan and Saguenay in 1961 and to Murray Bay in 1962. During 1965, Quebecair acquired Matane Air Services Ltd., Northern Wings Ltd., and Northern Wings Helicopters Ltd., and merged its scheduled services with those of its two subsidiaries Northern Wings Ltd., and Matane Air Services Ltd. In 1967, Quebecair acquired A. Pecteau Transport Aérien Ltée, thus extending its operations to the Abitibi region and eastern bank of Hudson Bay. Quebecair was purchased at the end of July 1968 by Sogebry Ltée, a Montreal private holding company. Also during 1968 Quebecair merged its operations with Eastern Provincial Airways. The agreement between the two airlines covers exchange of equipment and services and operational matters.

Quebecair is primarily responsible for the operation of scheduled service by large aircraft; the subsidiaries handle flights by light aircraft, charter and contract services. Scheduled services are operated over 6,000 miles and some 48 localities situated in nine economic regions of Quebec and Labrador are served. Points linked are Montreal, Quebec City, Murray Bay (Charlevoix), Baie Comeau (Hauterive), Churchill Falls (Twins Falls), Forestville, Gagnon, Wabush (Labrador City), Manicouagan, Mingan, Mont Joli, Rimouski, Rivière du Loup, Rivière au Tonnerre, Saguenay (Bagotville), Schefferville, Sept Îles, Senneterre, Mistassini, Temiscaming, Lac Doda, Lac Caché, Lac Mistassini, Rupert River, Fort George, Obedjiwan, Oskelaneo, Manouane, Val d'Or, Amos, Label-sur-Quévillon, Rupert House, Chibougamau, Matagami, Blanc Sablon, Saint Paul, Old Fort Bay, St. Augustin, La Tabatière, Tête à la Baleine, Harrington Harbour, Gethsemani, Kégaska, Natashquan, Aguanish, Baie Johan Beetz, and Havre St. Pierre.

At the end of 1968 the combined fleet of Quebecair and subsidiaries totalled 57 units: five turboprop Fairchild F-27, three turboprop DHC-6 Twin Otter, nine Douglas DC-3, two Canso PBY, one Curtiss C-46, two Lockheed 10, one Beechcraft D-18, five DHC-3

Otter, fourteen DHC-2 Beaver, five Cessna 180, two Cessna 185, five Bell 47-G-4 helicopters and three Hughes 300 helicopters. During 1967, Quebecair and subsidiaries carried 223,697 passengers, flew 114,125 mail-ton-miles and 1,072,045 freight-ton-miles.

Nordair Ltée-Ltd.—Nordair, with head office at Dorval, Que., was established in 1957 by the merger of Mont Laurier Aviation and Boreal Airways. Since its formation, Nordair has enjoyed a steady expansion and operates scheduled services in northern Quebec and in the Northwest Territories and charter flights throughout Canada and to points around the world. Scheduled services are operated from Montreal to Chibougamau, to Great Whale, to Fort Chimo in Quebec, and to Frobisher Bay and Resolute in the Northwest Territories, and from Frobisher Bay to Hall Beach, Broughton Island, Pangnirtung, Cape Dyer, Cape Dorset, Coral Harbour, Clyde River/Cape Christian and Igloolik in the Northwest Territories. Nordair introduced the first jet on its northern services in December 1968. It has purchased two Boeing 737s and operates charter flights to the south, mainly on weekends. Nordair has applied to the Air Transport Committee to provide air service between Montreal-Hamilton and Hamilton-Pittsburgh, as well as between Montreal and Toronto, Sault Ste. Marie and Fort William/Port Arthur. Charter flights are also operated, if necessary with ski-equipped DC-3s.

Nordair's fleet is composed of two Boeing 737-200C jet aircraft, three 1049H, three DC-4, three DC-3 and four C-46.

Transair Limited.—Transair Limited, with headquarters at the Winnipeg International Airport, operates scheduled services in Manitoba, Saskatchewan, Ontario and the Northwest Territories and charter flights throughout Canada and from Canada to the United States. The company's scheduled mainline services are operated in three areas: (1) the Prairies—from Winnipeg to Brandon-Regina-Saskatoon-Prince Albert and return, and from Winnipeg to Yorkton and return; (2) Manitoba and Central—from Winnipeg to The Pas-Thompson-Churchill and return, from Winnipeg to Dauphin-The Pas-Flin Flon-Lynn Lake and return, from Winnipeg to Thompson and return, from Winnipeg to Thompson-Churchill-Yellowknife and return, and from Winnipeg to Red Lake-Fort William/Port Arthur and return; and (3) Arctic—from Churchill to Rankin Inlet-Baker Lake and return and from Churchill to Rankin Inlet-Coral Harbour and return. Several other points in the Keewatin District of the Northwest Territories are also served on these two routes from Churchill.

Most of Transair's fleet of multi-engine aircraft (YS-11A, Viscount, DC-7C, DC-4, DC-3 and C-47) is stationed at Winnipeg but a DC-4 and a C-47 are usually positioned at the company's major base at Churchill, Man., in support of its Arctic and DEW Line operations. Since 1961, under contract with the United States Air Force, Transair has operated, from Winnipeg and Churchill, the vertical re-supply flights to the four main sites in the Canadian sector of the DEW Line in the extreme Arctic and is regarded as the largest contract cargo carrier in Canada.

Consistent with the regional air carrier policy of the Federal Government, Transair in 1967 sold its "bush" (primarily single-engine float and ski-equipped) aircraft, services and equipment in northwestern Ontario and Manitoba and has discontinued the flights it formerly operated from Sioux Lookout and Pickle Lake in Ontario, and Norway House and Lac du Bonnet in Manitoba to points in adjacent areas. As a result, the company is now concentrating on its scheduled operations to larger centres.

Major company developments in 1968 were: (1) the purchase and receipt of two YS-11A twin, jet-prop airliners, each capable of carrying 46 passengers and 3,000 lb. of cargo; (2) the purchase of two Boeing 737-200C twin jet aircraft for delivery in April and May 1970, each capable of carrying 115 passengers and 7,000 lb. of cargo; (3) the purchase of a DH Twin Otter for delivery in April 1969 for use on services to smaller settlements in the central Arctic north of Churchill; (4) the introduction of direct flights between Winnipeg-Thompson, Thompson-Winnipeg; (5) the inauguration in November of two flights weekly, each way, between Churchill and Yellowknife, N.W.T., in conjunction with

a special Winnipeg-Thompson-Churchill service; (6) the filing of an application with the Air Transport Committee for a Boeing 727 tri-jet service from Winnipeg to Fort William/Port Arthur-Toronto-Sault Ste. Marie-Toronto and an application to provide service, initially with piston aircraft, from Winnipeg to Kenora-Dryden-Fort William/Port Arthur.

In 1968, Transair carried 134,371 passengers, flew 2,986,345 miles and 3,376,733 revenue-ton-miles; employees numbered 391, including 54 pilots.

Pacific Western Airlines Ltd.—Pacific Western Airlines Ltd., with head office at Vancouver International Airport, operates over more than 8,000 route miles; its services include scheduled mainline, local regular unit toll and charter flights in Saskatchewan, Alberta, Yukon Territory, the Northwest Territories including the Arctic islands, and British Columbia. Regularly scheduled mainline services are operated northbound from Edmonton to Dawson Creek, Peace River, Fort McMurray, Uranium City, Fort Smith, Cambridge Bay, Fort Resolution, Hay River, Yellowknife, Fort Simpson, Wrigley, Resolute, Norman Wells and Inuvik. The only no-reservations-required AirBus service in Canada operates daily between Edmonton and Calgary. The company also operates international charter services.

On the Pacific Coast, mainline services are operated from Vancouver to Comox, Powell River, Campbell River and Port Hardy in B.C., and from Vancouver to Kamloops, B.C., to Calgary, Alta. Large aircraft charter services are operated from major centres.

Aircraft operated by Pacific Western number 30 and include Lockheed Hercules (freight), DC-7Cs, DC-6Bs, DC-6s, Convair 640 Javelin jet-props, DC-4s, Boeing 707s and Boeing 737s jet aircraft on mainline and charter services. In 1967, 401,955 revenue passengers were carried, 23,312,930 lb. of freight and express were carried and 6,159,108 miles were flown. Comparable figures for 1966 were 339,525, 27,998,405 and 5,695,180, respectively.

Commonwealth and Foreign Scheduled Commercial Air Services.—At the end of 1967, there were 26 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences issued for the following international scheduled commercial air services into Canada:—

Aeroflot, operating between Moscow (U.S.S.R.) and Montreal (Canada) in transit to New York.
Aerovias de Mexico, S.A., operating between Montreal and Toronto (Canada) and Mexico City (Mexico).

Air France (Compagnie Nationale Air France), operating between Paris (France) and Montreal (Canada) and beyond to Chicago (U.S.A.) with traffic rights, and to other points beyond in transit to Los Angeles and New York.

Airwest Inc., operating between Calgary (Canada) and Spokane (U.S.A.).

Alaska Airlines Inc., operating between Ketchikan (U.S.A.) and Prince Rupert (Canada).

Alitalia (Italian International Airlines), operating between Rome and Milan (Italy) and Montreal (Canada) and beyond to Chicago (U.S.A.) with traffic rights, and to other points beyond in transit.

Allegheny Airlines Inc., operating between Erie (U.S.A.) and Toronto (Canada).

American Airlines Inc., operating between Toronto (Canada) and New York/Newark (U.S.A.) and between Chicago (U.S.A.) and Toronto (Canada), and between Los Angeles (U.S.A.) and Toronto (Canada).

British Overseas Airways Corp., operating between London and Manchester (England), Prestwick (Scotland) and Montreal and Toronto (Canada), beyond Montreal with traffic rights to Chicago and beyond in transit to Boston, New York and Detroit (U.S.A.), and between London (England), Prestwick (Scotland), Gander (Canada), Bermuda, Nassau, Montego Bay, Barbados and Trinidad.

Deutsche Lufthansa Aktiengesellschaft (Lufthansa German Airlines), operating between Germany and Montreal (Canada) and beyond in transit to Los Angeles (U.S.A.) and Mexico City.

Eastern Air Lines, Inc., operating between the terminals Ottawa and Montreal (Canada), and New York (U.S.A.) and between the terminals Ottawa and Montreal (Canada) and Washington (U.S.A.) and between Tampa/Miami (U.S.A.) and Toronto (Canada) and between Buffalo (U.S.A.) and Toronto (Canada).

- Irish International Airlines (Aerlínte Éireann Teoranta)*, operating between Shannon (Ireland) and Montreal (Canada) and beyond in transit to Chicago (U.S.A.).
- Japan Air Lines Co. Ltd.*, operating between Tokyo (Japan) and Vancouver (Canada) and San Francisco (U.S.A.).
- KLM Royal Dutch Airlines*, operating between Amsterdam (Netherlands) and Montreal (Canada) and beyond in transit to Houston (U.S.A.) and Mexico City (Mexico) and for cargo to New York (U.S.A.).
- Mohawk Airlines, Inc.*, operating between Toronto (Canada) and Buffalo (U.S.A.) and Rochester (U.S.A.) and Toronto (Canada) and between Burlington (U.S.A.) and Montreal (Canada). (Service to both Rochester and Burlington terminates October 1969.)
- North Central Airlines, Inc.*, operating between Port Arthur/Fort William (Canada) and Duluth/Superior (U.S.A.) and between Detroit (U.S.A.) and Toronto (Canada).
- Northeast Airlines, Inc.*, operating between Montreal (Canada) and Boston (U.S.A.) via Concord, Montpelier-Barre, Burlington and White River Junction (U.S.A.) and between Tampa/Miami (U.S.A.) and Montreal (Canada).
- Northwest Airlines, Inc.*, operating between Minneapolis (U.S.A.) and Winnipeg (Canada).
- Qantas Empire Airways Ltd.*, operating between Sydney (Australia), San Francisco (U.S.A.) and Vancouver (Canada).
- Sabena Belgian World Airlines*, operating between Brussels (Belgium), and Montreal (Canada) and beyond in transit to New York (U.S.A.) and Mexico City.
- Scandinavian Airlines System*, operating between Stockholm (Sweden), Bergen (Norway), Copenhagen (Denmark) and Montreal (Canada), and beyond in transit to New York and Chicago (U.S.A.).
- Seaboard World Airlines, Inc.*, operating between points in the United States, Gander (Canada) and points in Europe.
- Swiss Air Transport Company Ltd., (Swissair)*, operating between Zurich and Geneva (Switzerland) and Montreal (Canada) and beyond in transit to Chicago (U.S.A.).
- United Air Lines, Inc.*, operating between Vancouver (Canada) and Seattle (U.S.A.) and between Chicago (U.S.A.) and Toronto (Canada).
- Western Air Lines, Inc.*, operating between Calgary (Canada) and Great Falls/Denver (U.S.A.) and between Los Angeles/San Francisco (U.S.A.) and Vancouver (Canada).
- Wien Consolidated Airlines, Inc.*, operating between Whitehorse, Y.T. (Canada) and Fairbanks and Juneau (Alaska, U.S.A.).

Flying Schools and Clubs.—During 1967 commercial flying schools registered as members of the Air Transport Association of Canada instructed and graduated 3,758 students as private pilots and 1,046 private pilots as commercial pilots.

Membership in 41 flying clubs connected with the Royal Canadian Flying Clubs Association numbered 9,495 at the end of 1967. During the year these clubs instructed and graduated 1,361 students as private pilots and 332 private pilots as commercial pilots.

Weather Services.*—Weather services for aviation are provided by the Meteorological Branch, Department of Transport. Routine hourly and special weather reports are available for 250 locations and these reports, together with upper wind and temperature observations for 33 stations, weather radar observations for nine stations, weather satellite pictures and pilot reports, provide current information on the state of the weather over Canada. Aerodrome area and upper wind and temperature forecasts are issued and made available by 11 Weather Offices for designated areas of responsibility within Canada and the Arctic Ocean.

Information required for pre-flight planning and in-flight operations, including information received from other countries in accordance with international agreement, is exchanged on the meteorological communications system including both teletype and weatherfax circuits.

Weather information is provided in Canada to pilots and aviation interests by 47 Weather Offices, 44 Weather Stations and 46 Aeradio Stations for flights within Canada and between Canada and the United States, Europe, Central America, the Caribbean and Asia.

* See also p. 48.

Ground Facilities.—Aircraft landing areas in Canada are listed in Table 2 and classified by administrative agency as licensed or unlicensed land facilities or seaplane bases, and military airfields. Licensed aerodromes are those that are inspected at regular intervals and meet specific standards, whereas unlicensed aerodromes may not meet the same standards. In addition to aerodromes, a network of radio aids to navigation is maintained to facilitate en route navigation and safe landings under instrument conditions. (See item on Aeronautical Navigation, p. 892.)

2.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province, as at Apr. 1, 1968

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Y.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Licensed Airports													
(Land)—													
Department of Transport.....	3	1	3	2	9	18	4	4	6	21	13	3	87
Municipal.....	3	—	1	6	26	24	6	16	25	19	—	3	129
Private.....	3	1	2	5	34	43	6	10	16	5	1	—	126
Heliports—													
Department of Transport.....	—	1	1	1	—	—	—	—	—	—	—	—	3
Private.....	—	—	—	—	5	9	1	—	1	12	1	2	31
Unlicensed													
Aerodromes—													
Department of Transport.....	2	—	—	—	1	4	1	—	—	7	5	3	23
Municipal.....	3	—	3	—	8	8	4	28	53	18	2	4	131
Private.....	3	1	3	8	18	24	31	83	46	74	16	3	310
Abandoned or													
unknown.....	4	—	—	2	10	21	2	7	2	26	—	2	76
Heliports.....	—	—	—	—	1	2	—	—	—	5	—	—	8
Licensed Seaplane													
Bases—													
Department of Transport.....	—	—	—	—	—	—	—	—	—	4	1	—	5
Municipal.....	—	—	1	—	3	14	—	1	1	11	—	2	33
Private.....	5	—	3	—	80	96	46	26	2	55	30	4	347
Unlicensed Seaplane													
Bases—													
Department of Transport.....	—	—	—	—	1	—	—	—	—	19	—	—	20
Municipal.....	—	—	—	—	—	24	1	3	1	4	—	1	34
Private.....	9	—	—	2	13	15	15	5	4	24	6	—	93
Abandoned or													
unknown.....	8	1	3	4	7	14	12	9	8	11	16	4	97
Military Airfields—													
DND (land).....	1	1	3	2	3	7	5	1	3	1	3	—	30
DND (seaplane).....	1	—	1	—	—	1	—	—	—	1	1	—	5
U.S. Navy.....	1	—	—	—	—	—	—	—	—	—	1	—	2
U.S. Air Force.....	1	—	—	—	—	—	—	—	—	—	17	2	20
Totals, Land Bases	21	4	13	24	112	153	55	148	149	187	38	20	924
Totals, Seaplane Bases.....	22	1	7	6	104	163	74	44	16	128	53	11	629
Totals, Military Airfields.....	4	1	4	2	3	8	5	1	3	2	22	2	57
Grand Totals.....	47	6	24	32	219	324	134	193	168	317	113	33	1,610

Air Traffic Control.—The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled airspace and between

aircraft and obstructions on the movement area of controlled airports. This is accomplished through airport control, terminal control and area control services. These and other allied services are described below.

Airport Control Service provides control service to flights operating in the vicinity of major civil airports where the volume and type of aircraft operations, weather conditions and other factors indicate its need in the interest of flight safety. The service also includes the control of all traffic on the manoeuvring area of the airport. Control is effected by means of direct radiotelephone communication or visual signals. Airport control towers are located at: Whitehorse, Y.T.; Fort St. John, Prince George, Victoria (international), Port Hardy, Abbotsford, Vancouver (international), Pitt Meadows and Kamloops, B.C.; Lethbridge, Calgary, Edmonton (industrial) and Edmonton (international), Alta.; Saskatoon and Regina, Sask.; Brandon, Winnipeg (international) and St. Andrews, Man.; Lakehead, Windsor, London, Toronto Island, Toronto (international), Buttonville, Ottawa (international), and North Bay, Ont.; Montreal (international), Cartierville, Quebec, Baie Comeau, Sept Iles and St. Hubert, Que.; Moncton, Fredericton and Saint John, N.B.; Halifax (international), and Sydney, N.S.; and Wabush, Gander (international) and St. John's, Nfld. Airport control service was instituted at St. Jean, Que., for the tourist season.

Area Control Service provides control service to en route flights operating within controlled airspace during weather conditions that prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments to conduct the flight. Area control centres are located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., Moncton, N.B., and Gander, Nfld. Each centre is connected with control towers, terminal control units, communications stations and operation offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through radio communications facilities available at these stations to all aircraft requiring area control service. Area control centres are also capable of communicating directly with most pilots flying within their control areas. Each area control centre is similarly connected with adjacent centres, including centres in the United States, for the purpose of co-ordinating control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of all aircraft operating in accordance with the Instrument Flight Rules (IFR) and a general record of aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within controlled airspace over Newfoundland, the Gander Control Centre provides control service within the airspace over approximately one half of the North Atlantic Ocean.

Terminal Control Service consists of the provision of separation to aircraft operating in accordance with IFR in the vicinity of all controlled airports. This service is normally provided by area control centres but separate terminal control units have been established at Calgary, Alta.; Saskatoon and Regina, Sask.; Lakehead, North Bay and Ottawa, Ont.; Quebec, Que.; and Halifax, N.S.

Northern Area Control Service, inaugurated Sept. 26, 1963, is provided by the Edmonton, Winnipeg and Moncton area control centres for aircraft flying above 23,000 feet, and is available throughout more than 3,000,000 sq. miles of Northern Canada.

Radar Control Service is provided extensively in the control of IFR traffic, both in terminal areas and while en route. Terminal service is provided at Vancouver, B.C.; Calgary and Edmonton, Alta.; Regina and Saskatoon, Sask.; Winnipeg, Man.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Montreal and Quebec, Que.; Moncton, N.B.; Halifax, N.S.; and Gander, Nfld. En route service is provided by area control centres and by radar units located at Kenora, Ont., and Goose Bay, Nfld. Ground Control Approach Service is provided at Gander, Nfld., and Precision Approach Radar Service is provided at St. John's, Nfld.; Halifax, N.S.; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver, B.C.

Flight Information Service is provided by all air traffic control units, but particularly by all area control centres. It consists of advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information, refuelling and transportation facilities, and other data of assistance to the pilot in planning or conducting a flight.

Alerting Service ensures that appropriate organizations are notified of aircraft that may be in need of search and rescue aid. This entails the maintenance and constant supervision of a continuous record of active flights to ensure that failure of an aircraft to arrive at the planned destination notified to air traffic control is detected immediately. The service is available to any pilot who files either a flight plan or flight notification with air traffic control.

Customs Notification Service facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada-United States boundary at certain designated customs airports. This is achieved through the prompt notification by air traffic control, at a pilot's request, of the customs officer at the destination airport of the intended arrival and of the need for customs clearance.

Airspace Reservation Service provides reserved airspace for specified air operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Airspace Reservation Co-ordination Office, located at Ottawa, is responsible for co-ordinating all airspace reservations in Canada and in the Gander Oceanic Control Area.

Aircraft Movement Information Service is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.

Airport Activity.—The upward trend of aircraft movements at Canadian airports continued in 1968. Of the total number of 5,510,350, almost three quarters took place at tower-controlled airports.

Tower-Controlled Airports.—On Dec. 31, 1968, DOT Air Traffic Control was operating towers on 42 airports across the country, an addition of three during the year. At these airports there were 4,048,224 aircraft movements (landings, take-offs and simulated approaches) in 1968, a moderate increase over the 4,037,749 movements in 1967. Since 1964 the volume of controlled aircraft activity had increased nearly 80 p.c. by the end of 1968.

Aircraft movements in 1968 were made up of 2,265,995 locals (landings and take-offs of flights that do not enter or leave the tower-control zone), 1,667,608 itinerant movements (those that enter or leave the tower-control zone) and 114,621 simulated approaches. Itinerant movements were nearly 69 p.c. greater in number than in 1964.

Toronto International Airport recorded the highest itinerant activity in 1968, a position held by Montreal International Airport for the preceding four years. Itinerant movements handled by the five major airports were (with 1967 figures in parentheses): Toronto International 153,336 (141,477), Montreal International 140,511 (151,502), Vancouver International 129,730 (124,748), Winnipeg International 109,268 (106,776), and Cartierville, Que., 91,527 (98,064). Toronto International Airport also handled the greatest number of airline scheduled flights with 101,227 (93,401 in 1967), followed by Montreal International with 89,164 (89,032), Vancouver International with 37,815 (34,907), Winnipeg International with 29,912 (27,040), and Calgary International with 24,013 (21,865).

In 1968, international movements rose 7.9 p.c. to 183,714, of which 60 p.c. were reported by two airports. Toronto handled 62,816 international movements, of which 56,327 were trans-border to and from the United States; Montreal reported 48,494 international movements, of which 35,876 were trans-border to and from the United States.

At tower-controlled airports, aircraft weighing less than 4,000 lb. were responsible for 47 p.c. of all itinerant traffic and those weighing over 39,000 lb. accounted for 31 p.c.

Airports without Tower Control.—During 1968, 102 airports without towers handled 1,462,126 aircraft movements, an increase of 32 p.c. over 1967 when 105 airports then in the survey reported 1,107,771 movements. Itinerant traffic amounted to 354,299 movements, an increase of 31 p.c. over the 269,825 movements in 1967. Local movements, which refer mainly to training flights, numbered 1,107,670, 33 p.c. more than the 830,046 local movements in the previous year.

Section 3.—Civil Aviation Operation Statistics

Table 3 gives a picture of commercial civil aviation in Canada for the years 1964-67. It shows data on miles and hours flown, traffic carried, fuel and oil consumed, employees, salaries and operating revenues and expenses, by type of service, for Canadian air carriers earning over \$100,000 gross annual flying revenues. Summary statistics are shown for those foreign companies operating scheduled services in Canada. Figures for Canadian carriers include domestic and international operations, and figures for foreign companies cover miles and hours flown over Canadian territory only, excluding passengers and goods in transit through Canada. Unit toll service refers to the transportation of passengers or goods at a toll per unit, whereas bulk service is the transportation of passengers or goods at

a toll per mile or per hour for the entire aircraft. Other flying services comprise non-transportation services such as flying training, aerial photography and aerial patrol and inspection.

3.—Summary Statistics of Civil Aviation, 1964-67

Item	1964	1965	1966	1967
Canadian Carriers—				
Unit Toll Transportation (revenue traffic only)—				
Departures.....No.	245,594	270,488	300,164	344,486
Hours flown....."	300,798	335,379	376,783	447,599
Miles flown....."	76,404,782	86,334,027	100,158,972	123,838,207
Passengers carried....."	5,197,579	5,939,267	6,737,425	8,157,263
Cargo and excess baggage.....lb.	117,497,668	147,004,678	181,254,830	190,785,392
Mail carried....."	46,804,224	50,440,235	49,019,825	55,445,778
Passenger-miles.....No.	3,939,075,129	4,731,304,865	5,606,619,064	6,935,143,376
Cargo and excess baggage ton-miles....."	69,038,182	88,228,205	111,563,285	128,039,194
Mail ton-miles....."	18,952,877	21,772,396	24,844,304	28,725,430
Bulk Transportation (revenue traffic only)—				
Departures.....No.	252,834	281,088	320,771	335,948
Hours flown....."	263,541	319,926	376,017	397,656
Miles flown....."	27,046,832	30,903,936	34,899,847	36,654,316
Passengers carried....."	584,509	631,182	724,262	790,587
Freight carried.....lb.	016,124,248	108,947,834	126,826,164	120,603,513
Passenger-miles.....No.	469,807,322	464,825,765	393,593,536	392,103,899
Goods ton-miles....."	17,839,881	13,507,018	12,758,560	13,330,317
Other Flying Services (revenue traffic only)—				
Hours flown.....No.	97,169	126,469	187,634	255,694
Canadian Carriers, All Services—				
Revenue Traffic—				
Departures.....No.	498,428	551,576	620,935	680,434
Hours flown....."	661,508	781,774	940,434	1,100,949
Miles flown....."	103,451,614	117,237,963	135,058,819	160,492,523
Passengers carried....."	5,782,088	6,570,449	7,461,687	8,947,850
Goods carried.....lb.	270,426,140	306,392,747	357,100,819	366,834,683
Passenger-miles.....No.	4,408,882,451	5,196,130,630	6,000,212,600	7,327,247,275
Goods ton-miles....."	105,830,940	123,507,619	149,166,149	170,094,941
Non-revenue Traffic—				
Hours flown.....No.	21,363	29,898	42,691	44,817
Passenger-miles....."	207,986,297	224,745,710	254,032,603	290,276,354
Goods ton-miles....."	7,709,768	7,995,872	8,649,711	8,746,168
Fuel consumed.....gal.	218,042,305	249,336,707	292,926,470	348,327,974
Oil consumed....."	343,128	395,347	457,607	481,991
Average employees.....No.	17,795	19,007	21,440	24,686
Salaries and wages paid.....\$	116,465,350	129,774,695	151,137,835	186,901,990
Operating revenues.....\$	334,930,874	392,806,566	460,556,463	543,609,778
Operating expenses.....\$	315,569,629	368,207,884	429,795,272	516,076,330
Canadian and Foreign Carriers, All Services—				
Hours flown.....No.	679,784	801,129	963,067	1,128,736
Miles flown....."	110,138,322	124,448,003	143,589,016	171,195,228
Passengers carried....."	6,774,652	7,838,539	9,023,691	11,596,102
Goods carried.....lb.	301,494,757	346,176,884	414,254,858	435,850,235

Summary statistics of Canadian and foreign commercial air carriers, by type of service, are shown in Table 4 for 1967. For the foreign carriers, hours and miles reported are those flown over Canadian territory only, and passengers and goods in transit through Canada are excluded. It is interesting to note that the six scheduled carriers*—those holding Class I licences from the Canadian Transport Commission—accounted for 91 p.c. of all revenue passengers transported by Canadian carriers during 1967. The weight of goods transported by scheduled carriers amounted to approximately 69 p.c. of the total tonnage moved by all Canadian air carriers earning over \$100,000 gross annual flying revenue.

Bulk transportation figures, except those for departures, include helicopter operations. The growing importance of helicopter services is evidenced by the fact that helicopters accounted for more than one quarter of the hours flown in domestic charter service in 1967.

* Excludes Nordair Ltée—Ltd. (see p. 860).

4.—Summary Statistics of Canadian and Foreign Commercial Air Carriers, 1967

Item	Canadian Carriers		Foreign Carriers		All Carriers
	Domestic Services	International Services	United States	Other Foreign	
Unit Toll Transportation (revenue traffic only)—					
Departures.....No.	295,414	49,072	..	..	..
Hours flown....."	330,114	117,485	5,802	20,930	474,331
Miles flown....."	78,577,182	45,261,025	1,882,852	8,455,035	134,176,094
Passengers carried....."	5,787,534	2,369,729	1,911,778	678,088	10,747,129
Goods carried.....lb.	174,958,803	71,272,367	25,143,335	43,644,064	315,018,569
Passenger-miles.....No.	3,814,373,402	3,120,769,974	80,280,688	543,135,625	7,558,559,689
Goods ton-miles....."	88,200,557	68,564,067	663,734	19,607,665	177,036,023
Bulk Transportation (revenue traffic only)—					
Departures.....No.	331,895	4,053	..	..	..
Hours flown....."	386,366	11,290	213	842	398,711
Miles flown....."	33,148,777	3,505,539	48,480	316,338	37,019,134
Passengers carried....."	690,411	100,176	20,075	38,311	848,973
Freight carried.....lb.	119,995,463	608,050	133,076	95,077	120,831,666
Passenger-miles.....No.	109,872,257	282,231,642	..	..	..
Goods ton-miles....."	13,184,058	146,259	..	..	..

5.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1965-67

Item	1965	1966	1967
	\$	\$	\$
Expenditure			
Air Transport Board.....	687,633	750,527	934,350
Air Services Administration.....	2,093,516	2,236,561	2,884,416
Construction Engineering and Architectural Branch, Administration.....	4,101,345	4,544,870	5,003,516
Civil Aviation Branch.....	16,678,584	17,411,754	21,864,860
Control of Civil Aviation.....	6,671,301	6,256,202	7,741,178
Air Traffic Control.....	9,423,017	9,708,714	12,128,357
Payments to other governments or international agencies for operation and maintenance of airports and airways facilities.....	272,509	246,798	282,085
Contributions to assist in the establishment or improvement of local airports and related facilities.....	35,556	855,122	948,914
Subsidies towards operation of municipal and other airports.....	—	—	184,687
Grants to organizations for development of civil aviation.....	275,294	344,918	679,639
Exchequer Court Awards.....	907	—	—
Airports and Field Operations Branch.....	24,113,701	26,449,205	28,892,106
Telecommunications and Electronics Branch.....	24,886,691	28,108,926	36,154,515
Radio Aids to Air and Marine Navigation.....	21,552,348	24,323,167	25,771,227
Radio Act and Regulations.....	3,187,654	3,698,058	4,208,241
Payment to CNR re deficit telecommunication facilities.....	146,689	87,701	175,047
Meteorological Branch.....	19,496,627	21,800,358	24,197,715
Totals, Expenditure.....	92,058,097	101,302,201	113,931,478
Revenue and Receipts			
Air Services Administration.....	6,833	10,371	9,971
Construction Engineering and Architectural Branch.....	1,574	3,034	3,351
Civil Aviation Branch.....	173,875	236,709	256,371
Aviation personnel licences.....	40,357	49,408	68,370
Airport licence fees.....	6,404	6,885	6,007
Aircraft registration and airworthiness certificates.....	83,662	94,666	101,175
Fees, Aeronautics Act.....	3,007	7,438	4,332

**5.—Expenditure and Revenue of the Department of Transport in connection with
Air Services, Years Ended Mar. 31, 1965-67—concluded**

Item	1965	1966	1967
	\$	\$	\$
Revenue and Receipts—concluded			
Civil Aviation Branch—concluded			
Air Traffic Control Division.....	495	293	2,701
Miscellaneous.....	30,466	61,905	57,557
Refunds of previous years' expenditure.....	9,484	16,114	16,229
Airports and Field Operations Branch.....	22,570,085	23,892,182	26,352,852
Aircraft landing fees.....	11,083,829	10,664,010	12,087,524
Aircraft parking and handling.....	141,959	168,853	168,612
Joint user terminal facilities charge.....	539,520	619,871	684,902
Land rental.....	622,936	699,685	739,502
Office and shop rental.....	2,298,080	2,609,335	2,456,020
Other rentals (living quarters, hangar space, equipment, restaurants, etc.).....	1,103,954	1,050,464	1,183,981
Concessions (gasoline and oil, taxi, restaurant, telephone, car rentals, parking, etc.).....	5,223,337	6,029,278	7,058,549
Sales (land, buildings, water, gasoline and oil, heat, power, etc.).....	575,301	965,822	905,689
Car parking meters.....	225,115	267,240	297,901
Observation roof-turnstiles.....	133,096	143,110	155,063
Mess receipts.....	37,489	99,142	110,428
Sanitary fees (garbage disposal).....	29,120	32,412	39,966
Registration fee—mobile equipment.....	—	108,609	100,229
Sundry services, sundries and miscellaneous.....	423,252	350,531	284,753
Refunds of previous years' expenditure.....	133,097	83,820	79,733
Telecommunications and Electronics Branch.....	4,709,219	4,718,413	5,095,337
Air-ground radio services.....	1,359,838	1,392,940	1,438,457
Communication facilities.....	3,992	—	—
Radio message tolls.....	316,592	328,873	322,214
Private commercial broadcasting station licence fees.....	1,720,285	1,634,622	1,990,479
Radio operators' examination fees.....	5,273	5,874	7,359
Radio station licence fees.....	562,252	548,375	738,298
Rentals—living quarters.....	449,011	437,572	370,346
Other rentals.....	65,868	73,343	65,512
Sales (land, buildings, power, publications, etc.).....	60,635	129,149	56,331
Telephone and telegraph services and tolls.....	52,810	—	—
Miscellaneous.....	52,782	100,048	69,853
Refunds of previous years' expenditure.....	59,881	67,517	36,488
Meteorological Branch.....	263,001	284,586	215,171
Totals, Revenue and Receipts.....	27,724,587	29,145,295	31,933,053

Table 6 shows the number of civil air personnel and airport licences in force and the number of civil aircraft registered at the end of each of the years 1967 and 1968.

**6.—Personnel and Airport Licences in Force and Aircraft Registered as at Dec. 31,
1967 and 1968**

Item	1967	1968	Item	1967	1968
	No.	No.		No.	No.
Personnel Licences in Force—			Personnel Licences in Force—		
Pilot—			concluded		
Glider.....	1,025	1,175	Flight engineers.....	102	112
Private.....	21,089	23,621	Aircraft maintenance engineers..	2,632	2,811
Commercial.....	4,268	5,004			
Senior commercial.....	507	550	Airport Licences in Force.....	748	784
Airline transport.....	2,145	2,342			
			Aircraft Registered—		
Totals, Pilot Licences.....	29,034	32,692	Commercial.....	2,561	2,930
			Private.....	6,387	6,843
Air navigators.....	179	193	State.....	214	200
Air traffic controllers.....	865	924			
			Totals, Aircraft Registered..	9,162	9,973

PART V.—OIL AND GAS PIPELINES*

Oil Pipelines.—Since the late 1940s large capital expenditures have been made each year for oil pipeline construction. In 1967 they were an estimated \$95,400,000 and were forecast at \$84,900,000 for 1968, raising the estimated cumulative total for the period 1950-68 to \$848,900,000.

The prime components of the network of Canadian oil pipelines are the trunk lines of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line Company. The bulk of domestic crude oil is carried in these lines. Refineries that do not rely on these systems are located in the oil producing regions such as Calgary and Edmonton. The Interprovincial system carries crude oil eastward from Edmonton, receiving and discharging oil at various locations along its length. The Trans Mountain system operates similarly westward from Edmonton. Supplying these two trunk lines are pipeline systems funnelling oil from hundreds of fields into storage tanks at the pipeline terminals. Some of these feeder lines are impressive in themselves, not only in size of pipe and in length of route but in the volumes of oil that they transport. Most of the feeder lines are in Alberta, which is to be expected because of the pre-eminent position of that province in oil production. In 1966, 143 miles of 20- to 24-inch pipe were laid by Rainbow Pipe Line Company Ltd. to complete the 479-mile line from the Rainbow-Zama Lake producing area in northwestern Alberta to connect with Interprovincial at Edmonton. At year-end, additional pumping capacity was being added to increase capacity from 55,000 bbl. to 125,000 bbl. daily, while full design capacity is rated at 265,000 bbl. daily. A competing line to the same area was begun in November 1967 by Peace River Oil Pipe Line Company Limited; it will build a 296-mile, 20-inch line from the Zama Lake field to connect with the Company's existing Valleyview pumping station.

The main pipeline terminal at Edmonton has 10 crude oil feeder lines, including the Interprovincial extension to Redwater, as follows:—

<i>Pipeline</i>	<i>Total System Length</i>	<i>Capacity</i>	<i>General Area of Supply Related to Edmonton</i>
	<i>miles</i>	<i>bbl./day</i>	
Britam Oil Pipe Line Co. Ltd.....	410	60,000	south-southeast
Federated Pipe Lines Ltd.....	529	151,000	northwest
Great Canadian Oil Sands Limited.....	266	50,000	north-northeast
Imperial Pipe Line Co. Ltd.....	210	72,000	southwest
Interprovincial Pipe Line Co.....	31	110,000	northeast
Canadian Industrial Gas and Oil Ltd.....	82	15,000	southeast
Peace River Oil Pipe Line Co. Ltd.....	704	95,000	northwest
Pembina Pipe Line Ltd.....	889	154,000	west-southwest
Rainbow Pipe Line Company, Ltd.....	565	55,000	northwest
Texaco Exploration Company.....	173	111,000	south

In addition, three pipelines are connected to the Interprovincial at Hardisty, some 100 miles southeast of Edmonton. Here, Gibson Associated Oil Ltd. makes deliveries of up to 15,000 bbl. daily of oil from fields just south of the pipeline terminal. Husky Pipe Line Ltd. takes deliveries of condensate and delivers a blended crude, incorporating the light condensate received and the heavy Lloydminster asphaltic crude; a twin-line system carries the condensate to Lloydminster in one line and returns the blended oil in the other, which has a capacity of 22,000 bbl. daily. The third pipeline connection, Bow River Pipe Line Ltd., carries crude from the most southerly oil fields in Alberta, near Taber; this line has a capacity of 20,000 bbl. daily. Home Oil Limited operates a pipeline serving refineries in the Calgary area with oil from fields north of the city; the line also has connections with the Rangeland pipeline which, in turn, is linked to the Texaco line going north to Edmonton. Also serving Calgary is the oldest pipeline in Alberta operated

* Prepared in the Mineral Resources Branch, Department of Energy, Mines and Resources, Ottawa.

by Valley Pipe Line Company, which carries crude from the historically important Turner Valley in quantities up to 15,000 bbl. daily.

The Trans Mountain pipeline also has a second receiving terminal in Alberta at Edson where the Peace River pipeline makes deliveries to Trans Mountain from fields to the north. In British Columbia, the Western Pacific Products-Crude Oil Pipelines Ltd. carries crude over a distance of 500 miles from fields near Fort St. John in northeastern British Columbia to the Trans Mountain pipeline at Kamloops; this line has a capacity of 64,000 bbl. daily.

Three main pipeline systems carry crude oil from Saskatchewan fields to the Interprovincial pipeline. The largest is the Westspur Pipe Line Company-Producers Pipelines Ltd. network, with a capacity of 175,000 bbl. daily, which delivers crude from the important southeast Saskatchewan producing area to the Interprovincial terminal at Cromer, Man., and also carries crude delivered to it by Trans-Prairie Pipelines Ltd. from fields in the Midale area of southeast Saskatchewan. The South Saskatchewan Pipe Line Company, with a capacity of 115,000 bbl. daily, takes medium-gravity crude from fields near Swift Current in southwest Saskatchewan to the Interprovincial pipeline at Regina. The third system is the mid-Saskatchewan pipeline of Royalite Oil Company, which has a capacity of 10,000 bbl. daily and carries crude oil from the Coleville-Dodsland area to the Interprovincial terminal at Kerrobert.

The Manitoba System of Trans-Prairie Pipelines Ltd. is the only pipeline in Manitoba serving the producing fields in the general area of Virden. It carries crude to the Interprovincial terminal at Cromer and has a capacity of 27,000 bbl. daily.

Interprovincial Pipeline.—The system of Interprovincial Pipe Line Company is Canada's longest oil pipeline. It incorporates the wholly owned subsidiary in the United States, Lakehead Pipe Line Company Incorporated, and has a right-of-way length of 2,025 miles including a 95-mile lateral to Buffalo, New York. The system has two complete oil lines between Edmonton and Superior, Wisconsin, and in certain high-traffic sections, such as between Cromer and Gretna in Manitoba, there are three lines and occasionally four. The pipeline can deliver 28 grades of crude oil. Year-end capacities of the various sections of the pipeline are shown below for 1967 and for 1968.

<u>Section</u>	<u>1967</u>	<u>1968</u>
	bbl./day	bbl./day
Edmonton-Regina.....	516,000	633,000
Regina-Cromer.....	532,000	823,000
Cromer-Gretna.....	709,000	862,000
Gretna-Superior.....	664,000	821,000
Superior-Sarnia.....	563,000	536,000
Superior-Chicago.....	—	204,000
Sarnia-Port Credit.....	280,000	281,000
Westover-Buffalo.....	76,000	79,000

Interprovincial serves 31 refineries: three at Edmonton; one at Lloydminster via the Husky pipeline; one at Saskatoon via Saskatoon pipeline from Mildred; one at Moose Jaw via B-A Saskatchewan pipeline from Stony Beach; two at Regina; one at Brandon via Anglo Canadian pipeline from Souris; two at Winnipeg via Winnipeg pipeline from Gretna, 13 in the United States either directly or through connecting carriers; three at Sarnia; two at Oakville; one at Clarkson; and one at Port Credit.

Trans Mountain Pipeline.—The system of Trans Mountain Oil Pipe Line Company extends from Edmonton to Vancouver via Jasper and has a right-of-way length of 780 miles, including a section of 57 miles in the United States which belongs to a wholly owned subsidiary of Trans Mountain. Trans Mountain serves eight refineries: one at Kamloops; four at Vancouver; and three in the Puget Sound region of Washington State. Under a contract with British American Oil Company Limited, facilities were completed at the

Vancouver terminal to handle storage and transfer of liquid propane from railway tank cars to refrigerated Japanese tankers. First loading under the 10-year contract was made in October 1966, and in 1967, 2,300,000 bbl. were delivered to tankers. Capacity of various segments of the system at the end of 1967 are shown below.

<i>Section</i>	<i>1967</i>	<i>Section</i>	<i>1967</i>
	bbl./day		bbl./day
Edmonton-Edson.....	310,000	Sumas-Ferndale.....	220,000
Edson-Kamloops.....	285,000	Sumas-Anacortes.....	235,000
Kamloops-Sumas.....	335,000	Sumas-Burnaby.....	335,000

Montreal-Portland Pipeline.—The Montreal refinery centre is served by a 236-mile pipeline which is a joint system of Montreal Pipe Line Company and its wholly owned subsidiary in the United States, Portland Pipe Line Corporation. This line takes delivery of tanker-borne crude from Venezuela, the Middle East and Africa at Portland, Maine. In 1965, the company completed a 24-inch pipeline alongside the existing 18-inch and 24-inch crude oil lines. An additional 24-inch line was completed under the St. Lawrence River in 1967 to serve the refineries in Montreal and, at the same time, 16- and 20-inch lines were installed for future use. Present capacity of the system is 400,000 bbl. daily.

Product Pipelines.—Traditionally, a product pipeline carries refined products from oil refineries to truck terminals in large consuming centres. However, with the growth of natural gas processing in Canada, which results in large volumes of products such as propane, butane and pentanes plus being produced, a new type of product line has emerged which carries these products to markets or to refineries.

There are three product lines in Eastern Canada, all supplying markets in Ontario with refined petroleum products. Two pipelines, Sun-Canadian Pipe Line Company and Sarnia Products Pipe Line, run from refineries at Sarnia to bulk plants in London, Hamilton and Toronto. Trans Northern Pipe Line Company, once a pipeline carrying products from Montreal to markets in Ontario as far west as Hamilton, now has a two-way flow. Products from Montreal are now delivered only in the area east of Brockville, including the Ottawa Valley; products from refineries west of Toronto are carried eastward as far as Kingston.

In Western Canada, the Petroleum Transmission Company pipeline carries propane, butane and pentanes plus from a plant at Empress in Alberta to Winnipeg in Manitoba, a distance of 578 miles. The predominant product carried is propane which is also marketed at various locations along the line. Elsewhere in Alberta, the Rimbey Pipe Line Company transports condensate from the Rimbey gas plant and takes deliveries from the Rangeland condensate pipeline to serve areas north of Calgary as far as Edmonton. Also going to Edmonton from the Leduc gas conservation plant are three pipelines owned by Nisku Products Pipe Line Company Ltd., one each for propane, butane and pentanes plus. Near Calgary, Home Oil Company operates a condensate pipeline to serve refineries there and also to make deliveries to the Rangeland condensate pipeline. There are other condensate pipelines in Alberta, most of which are associated primarily with production and do not serve end-users.

Pipeline Tariffs.—Typical of the charges to move crude oil are the following pipeline tariffs:—

	<i>Charge</i>	<i>Distance</i>
	cts./bbl.	miles
Edmonton to Vancouver.....	40.0	718
Edmonton to Regina.....	20.7	438
Edmonton to Winnipeg.....	32.7	847
Edmonton to Sarnia.....	48.0	1,743
Edmonton to Port Credit.....	51.0	1,899
Portland to Montreal.....	10.5	236

Natural Gas Pipelines.—Natural gas now accounts for over 17 p.c. of Canada's energy requirements and, in addition, large volumes are delivered to markets in the United States. Relatively small amounts of natural gas have been transported in other areas of the world as a liquid under refrigeration, and this method was utilized for the first time in Canada in 1967 to supply gas to the distribution system of the town of Squamish, B.C. However, most of the gas used in Canada, as well as in North America as a whole, is moved by pipeline. There is an extensive network of pipelines serving most centres of population from Vancouver to Montreal and delivering gas to several points of export on the United States border.

Since the mid-1950s when large-volume gas removal was authorized from Alberta, capital expenditures in gas pipeline construction have constituted a significant proportion of the country's total outlay for transportation facilities. In 1967, capital expenditures of \$184,400,000 were made, and forecast expenditures for 1968 amounted to \$269,500,000, bringing the cumulative expenditures for the period 1955-68 to an estimated \$1,334,000,000 for gathering and transmission systems, with an additional \$976,500,000 for distribution systems.

Pipelines are usually categorized under three headings—gathering lines, transmission lines and distribution lines. The gathering lines are those that take gas from the wells or separators to the field gate or some other specified point. Transmission lines are normally the large-diameter pipelines that take gas from gathering lines and deliver it to the distributors principally at the 'city gate'. In total, there were 48,210 miles of all types of gas pipeline in operation at the end of 1967, of which 5,739 miles were gathering, 15,655 miles were transmission and 26,816 miles were distribution.

Unlike oil pipeline companies which are common carriers that transport oil for a fixed charge, gas pipeline companies, with few exceptions, own the gas that is transported. The principal exception is the Alberta Gas Trunk Line Company which delivers virtually all of the gas exported from Alberta to the provincial boundary where main transmission companies accept delivery. This is an important exception because most of the Canadian gas reserves are in Alberta. The right-of-way distance of Alberta Gas Trunk is 2,094 (total) miles.

Some details of the main transmission systems are contained in the following paragraphs. Like oil pipelines, there are two trunk lines serving Canada. One is the Trans-Canada pipeline and the other is the Westcoast pipeline.

Trans-Canada Pipeline.—The Trans-Canada pipeline, extending from the Alberta border near Burstall, Sask., makes its way eastward through Saskatchewan and Manitoba to the Ontario Lakehead cities of Port Arthur and Fort William and then follows a broad, northerly-arched route through the clay belt of Ontario, then southward via North Bay to Toronto. There the line divides, one part going to the western region of Ontario and the other eastward along the northern shore of Lake Ontario and the St. Lawrence River to Montreal. Lateral pipelines serve communities that are not within the immediate reach of the main pipeline. Trans-Canada is Canada's longest pipeline, with a right-of-way distance of 2,475 miles. The maximum amount of gas delivered in any one day by the company in 1967 was 1,694,000 Mcf. Export sales average about 242,000 Mcf. daily.

In 1967, the company received approval of United States regulatory authorities to construct, jointly with a United States company, a 971-mile, 36-inch transmission line from Emerson, Man., to Sarnia, Ont., with a 10-unit lateral to Sault Ste. Marie, Ont. The first phase was completed in late 1967 to provide Eastern Canada with gas from Michigan and the remainder in late 1968.

Westcoast Transmission Company.—The supply of gas for Westcoast comes mainly from fields in northeastern British Columbia but significant quantities are gathered in northwestern Alberta. The main line from Fort St. John runs in a southerly direction to Vancouver and to the United States border at Sumas, B.C. An extension to its system from the Fort St. John area to the Fort Nelson area permits the pipeline system to pick

up gas from the main areas stretching from Dawson Creek to the Kotocho Lake area, northeast of Fort Nelson. The right-of-way distance of the Westcoast system is 940 miles.

Alberta Natural Gas Company.—Although the Alberta Natural Gas pipeline is only 107 miles long, it forms part of one of the major gas export pipelines that carries Canadian gas as far south as California. The line extends from the Alberta border through the Crowsnest Pass to Kingsgate, B.C., where it crosses the International Border and continues through Idaho.

Other Gas Pipelines.—There are many other natural gas pipelines operating in Canada. Many are gathering systems and others are exclusively distribution systems. They constitute important sectors of the country's gas pipeline industry, as is evidenced by their aggregate pipeline mileage. To mention a few, Canadian Montana pipeline gathers gas in the southeastern part of Alberta and transports it southward into the State of Montana; the company also operates a line that purchases gas from Alberta Gas Trunk Lines in the southwestern part of the province. In Saskatchewan, the system of the Saskatchewan Power Corporation has gathering, transmission and distribution systems and delivers all of the gas for sale in Saskatchewan; the Corporation had 5,375 miles of pipeline in operation at the end of 1967. Three other systems have gathering, transmission and distribution systems: in Alberta, Canadian Western Natural Gas Company Limited operates in the southern portion of Alberta and Northwestern Utilities in the northern area, the combined length of pipe being 5,956 miles; Union Gas operates mainly in southwestern Ontario, picking up gas from some fields that are the oldest in Canada. These and many other systems make up the fast-growing network of gas pipelines in Canada which serves domestic, commercial and industrial customers in all provinces except the Maritimes.

Oil Pipeline Statistics.*—There were 43 oil pipeline companies operating in Canada at the end of 1967. Pipeline deliveries shown in Table 1 were made to non-pipeline carriers, foreign pipelines, and terminals including refineries and distributing centres.

* Statistics of oil pipelines are given in greater detail in the DBS monthly report *Oil Pipe Line Transport* (Catalogue No. 55-001).

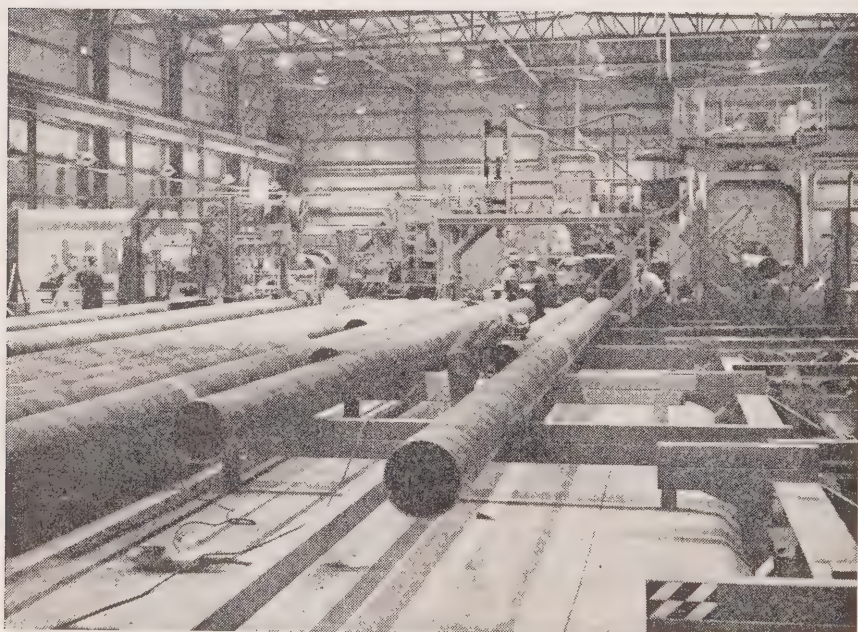
1.—Pipeline Movements of Oil, 1964-67

Item	1964	1965	1966	1967
	bbl.	bbl.	bbl.	bbl.
Receipts				
Crude Oil and Pentanes Plus—				
Canadian.....	297,792,525	315,420,522	344,853,598	376,461,625
Imports.....	94,230,399	92,234,607	112,389,899	116,712,556
Liquefied Petroleum Gases and Products—				
Canadian.....	67,285,979	75,597,987	78,509,586	80,739,717
Imports.....	544,040	364,579	406,824	777,045
Totals, Net Receipts.....	459,852,943	483,617,695	536,159,907	573,690,943
Deliveries				
Crude Oil and Pentanes Plus—				
Canadian.....	290,207,682	297,407,824	329,186,093	336,295,830
Exports.....	101,532,615	107,651,950	126,591,959	151,178,971
Liquefied Petroleum Gases and Products—				
Canadian.....	64,803,049	73,188,316	75,035,182	78,396,933
Exports.....	2,712,817	2,679,069	3,169,153	3,213,579
Totals, Net Deliveries.....	459,256,163	480,927,159	533,982,387	569,085,313

Revenue and employee data shown in Table 2 are not complete; both revenue and employee figures have been omitted for some companies, since pipeline operation forms only a part of the activities of these establishments and the data are not separable.

2.—Operating and Financial Statistics of Oil Pipelines, 1964-67

Item		1964	1965	1966	1967p
Pipeline Mileage—					
Trunk lines.....	No.	7,952	8,259	8,681	9,606
Gathering lines.....	"	3,792	4,056	4,314	4,523
Daily Av. of Net Deliveries—					
Trunk lines.....	bbl.	1,240,007	1,314,842	1,455,059	1,559,138
Gathering lines.....	"	737,118	787,050	881,537	
Barrel Miles—					
Trunk lines.....	'000	191,241,600	203,999,419	228,125,498	255,065,842
Av. Miles per Barrel—					
Trunk lines.....	No.	416	425	429	448
Property account.....	\$	617,758,245	654,023,499	723,038,574	780,971,743
Long-term debt.....	\$	291,144,511	299,200,374	344,162,634	333,417,502
Operating revenues.....	\$	138,478,844	145,809,378	160,180,889	176,330,320
Operating expenses.....	\$	32,118,605	34,498,816	38,139,905	42,557,614
Net income (after income tax).....	\$	45,997,272	55,521,157	55,593,017	59,958,766
Av. employees.....	No.	1,492	1,542	1,437	1,547
Salaries and wages.....	\$	10,665,313	10,929,026	11,512,205	13,007,526



A new Saskatchewan plant produces spiral-weld pipe from 16 to 80 inches in diameter which will be added to the thousands of miles of pipeline constructed during the past decade to carry oil, gas and their products to refineries and to markets.

Gas Pipeline Statistics.—As already stated, the natural gas transport industry became a significant factor in the Canadian economy in 1957 with the completion of the first of several extensive pipelines constructed to transport natural gas from the field or processing plant to distribution outlets. Consequently, the distribution industry also greatly increased deliveries to consumers from that time. Table 3 illustrates this expansion for the years 1964-67.

3.—Receipts and Disposition by Natural Gas Utilities, 1961-67

Item	1964	1965	1966*	1967
	Mcf.	Mcf.	Mcf.	Mcf.
Receipts				
Transport system.....	727,827,360	811,971,836	858,625,620	951,266,191
Distribution systems.....	216,418,402	216,851,102	247,969,783	266,403,558
Imports.....	9,641,684	17,745,771	44,606,905	70,462,852
Other.....	333,127	369,186	22,397	68,882
Totals, Net Receipts.....	954,220,573	1,046,937,895	1,151,224,705	1,288,201,483
From storage.....	27,179,191	34,747,749	35,485,236	47,767,756
Totals, Supply.....	981,399,764	1,081,685,644	1,186,709,941	1,335,969,239
Disposition				
Sales to ultimate consumers.....	504,503,388	573,016,223	635,514,622	695,022,674
Exports.....	392,239,429	404,709,025	431,818,191	513,231,383
Other.....	2,701,725	2,457,815	2,781,338	1,001,551
Totals, Net Deliveries.....	899,444,542	980,183,063	1,070,114,151	1,209,255,608
To storage.....	35,515,628	46,168,826	52,550,350	62,638,709
Line pack fluctuation.....	683,907	550,307	366,229	-362,352
Gas used in system.....	30,126,023	45,077,034	50,353,672	55,419,967
Line losses and unaccounted amounts.....	15,629,664	9,706,414	13,325,539	19,017,307
Totals, Demand.....	981,399,764	1,081,685,644	1,186,709,941	1,335,969,239

PART VI.—GOVERNMENT PROMOTION AND REGULATION OF TRANSPORTATION

The Federal Government plays a twofold role in the development of transportation services. One is the promotional role, ensuring the growth and development of the kind of transportation appropriate to the times; the other is a regulatory role, including economic regulation of rates and services and also technical regulation to meet safety requirements and for other purposes. Examples of promotion are the building of canals from the time of Confederation to the recent constructing of the St. Lawrence Seaway, the underwriting of railway development and branch-line extension, the establishment of Air Canada, the large investments in airports and aeronautical installations, and the building of the Trans-Canada Highway.

The Department of Transport and the various Crown agencies reporting to Parliament through the Minister of Transport have jurisdiction over canals, harbours, shipping, civil aviation and interprovincial and international railways. Interprovincial or international pipelines for carrying gas, crude oil or petroleum products are under the jurisdiction of the National Energy Board. Jurisdiction over for-hire interprovincial or international highway transport also rests with the Federal Government but these powers are at present exercised by the provincial highway transport boards under the federal Motor Vehicle Transport Act of 1954.

Railway regulation was developed in a period when railways enjoyed a virtual monopoly of transport in the country. Measures to protect the public against excessive charges, unjust discrimination and other objectionable monopoly practices, together with measures to ensure safe operations, have over the years subjected railways to the most comprehensive regulation of any Canadian industry. In the intervening years the rapid growth of road, air and pipeline services has ended the railway monopoly for a large part of the total traffic available and has placed the railways in a highly competitive situation.

A Royal Commission was appointed in 1959 to inquire into the railway rate structure and other problems. Its findings indicated a need to shift from regulating monopoly to maintaining a balance between the several competing modes of transport. Legislation based on the findings of the Royal Commission was passed by Parliament and received Royal Assent on Feb. 9, 1967. The statute, called the National Transportation Act, defines a national transportation policy for Canada looking to the achievement of an economic and efficient transportation system making the best use of all available modes of transportation at the lowest total cost. It establishes a new body, the Canadian Transport Commission, to carry out the functions formerly performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. In addition, the Act creates a framework within which the pipeline carriage of commodities other than oil and gas and the interprovincial and international motor transport undertakings could be regulated by the Canadian Transport Commission.

The general purpose of the Act is to create a situation in which the development of the transportation industry and the protection of the public against excessive or discriminatory charges are accomplished in the main by competition between modes rather than by regulation and control. The railways are relieved of some of the more onerous and outdated restrictions on their freedom to meet competition. On the other hand, a shipper who has no practical alternative to rail shipment can apply to have a maximum rate fixed for his goods by the new Commission. The Act also provides a procedure to allow the railways, under safeguards for the public interest, to abandon lines and withdraw passenger services where they are no longer needed.

The Canadian Transport Commission.—The Commission, created by the National Transportation Act (SC 1967, c. 69), was organized on Sept. 19, 1967 and succeeded to all the powers and duties of its predecessors, the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. The Commission is a court of record. It consists of a maximum of 17 members, of whom one is president and two are vice-presidents. One of the vice-presidents is charged with the superintendence of the work of the committees of the Commission and the other is charged with the superintendence of the programs of study and research of the Commission. For the purpose of performing its duties the Commission must establish committees, any of which may, in accordance with the rules and regulations of the Commission, exercise the powers of the Commission. Three of these committees—the Railway Transport Committee, the Air Transport Committee and the Water Transport Committee—are at present functioning in respect of these several modes of transport. The finding or determination of the Commission upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of Canada upon a question of law or a question of jurisdiction with leave of that Court, or by the Governor in Council. However, a party to an application for a licence under the Aeronautics Act or the Transport Act may appeal to the Minister of Transport from a final decision of the Commission.

The Commission has jurisdiction under more than a score of Acts of Parliament, including the Railway Act, the Aeronautics Act and the Transport Act, over transportation by railway, by air and by inland water, and over communication by telephone and telegraph.

Railway Transport.—Under the Railway Act the jurisdiction of the Commission is, stated generally, in respect of construction, maintenance and operation of railways that

are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation and uniformity of railway accounting. The Commission also has certain jurisdiction over telephones and telegraphs, including regulation of the telephone tolls of The Bell Telephone Company of Canada and over tolls for the use of international bridges and tunnels.

Except for certain statutory rates, and subject to certain powers of the Commission to deal with rates that it finds to be contrary to public interest, the railways are free to charge rates as they wish. However, rates must be compensatory, and the Commission may prescribe tolls for captive shippers if such tolls take undue advantage of a monopoly situation favouring the railways.

Air Transport.—The Commission is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Commission issues regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, accounts, records and reports, traffic tolls and tariffs, and various other matters. All regulations, rules and orders issued by the former Air Transport Board continue in force until repealed or amended by the Canadian Transport Commission.

On Oct. 20, 1966, the Minister of Transport tabled in the House of Commons a "Statement of Principles for Regional Air Carriers", which assigns to the Commission the responsibility for initiating measures to implement the policy set out therein. In this connection, the Commission has under review the route structures of regional air carriers.

The Commission takes an active part in the work of the International Civil Aviation Organization and, when appropriate, undertakes bilateral negotiations for the exchange of traffic rights. At present, Air Canada and CP Air are Canada's designated international scheduled carriers.

Water Transport.—Under the Transport Act, the Commission entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and on the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Commission must be satisfied that public convenience and necessity require such transport. The Commission also has regulative powers over tolls for such transport.

In addition, the Commission administers subsidies paid by the Federal Government for the maintenance of certain coastal and inland water shipping services; the services and the amounts paid for the years ended Mar. 31, 1967 and 1968 are given on p. 854.

The National Energy Board.—The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The functions and operations of the Board are covered in the Domestic Trade and Prices Chapter of this volume, Part II, Section 4.

CHAPTER XX.—COMMUNICATIONS

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Section 1.—Telecommunications*

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph, radio and television facilities, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country—its size, its topography, its climate, its small population—which have reared their heads in other areas of development, have had to be faced as well in the field of telecommunications. That these have been met is evidenced by the fact that today Canada possesses communications facilities and services which are second to none in the world and which are somewhat unique in structure. On the one hand there is a group of telephone companies acting in concert to provide national services and on the other there are two railway companies providing services, each of which is national in scope. These companies provide a most comprehensive total telecommunications network and almost all Canadians from the Arctic Coast to the 49th parallel and from St. John's in Newfoundland to Vancouver in British Columbia can communicate with each other and with the rest of the world by the simple action of twisting a dial or pushing a button. Messages are carried by microwave, tropospheric scatterwave systems, land lines and high frequency radio bands. The great advancement in telecommunications during the past few years indicates that machine-to-machine communications will, within a very short time, surpass the volume of man-to-man communications. The use of computers is becoming more and more commonplace and the ability to transmit computer data from one location to any distant location across the country is a tremendous boon to industry and commerce and a benefit to every Canadian.

The growing importance of telecommunications and the Federal Government's increasing involvement has led to the creation in 1969 of a federal Department of Communications. The new Department includes: the Telecommunications Policy and Administration Bureau, formerly with the Department of Transport, responsible for the regulation of radio and the management of radio frequencies; the Defence Research Telecommunications Establishment, formerly a branch of the Defence Research Board; the Canadian

* Revised by Canadian National Telecommunications, Ottawa.

Overseas Telecommunications Corporation which formerly reported to the Minister of Transport; and the Canada Post Office. The decision to form the Department of Communications makes it clear that the Federal Government has taken a new approach to the subject of telecommunications which is concerned with the total information system of this country, that is, with the transmission and reception of ideas and information, whether between people by way of telephone or telegraph, between computers, data links, radio systems, letters or via satellite or ground facilities. It is expected that the new Department will form national communications policies with a national communications program.

Public Telephone Service.—Telephone service, local and long-distance, is provided by telecommunications companies serving a total of some 8,400,000 telephones across Canada. The largest serving organization is the Trans-Canada Telephone System comprising eight telephone companies, either privately or publicly owned—the Alberta Government Telephones, the British Columbia Telephone Company, the Manitoba Telephone System, the Maritime Telephone and Telegraph Company Limited, the Saskatchewan Government Telephones, the Avalon Telephone Company Limited, the Bell Telephone Company of Canada, and the New Brunswick Telephone Company Limited. In addition, there are over 2,200 independent telephone companies providing private service in smaller communities across the country, many of which link into the Trans-Canada Telephone System for world-wide telephone access. Each company has a monopoly within its own territory and is subject to government regulations at the appropriate level—federal, provincial or municipal.

CN Telecommunications, the largest single telecommunications system in Canada on the basis of area served, provides telephone service for residents in the Yukon and Northwest Territories, in parts of Newfoundland, and in northern sections of British Columbia. In all, there are some 35,000 subscribers on the CNT telephone network. Without exception, all the CNT exchanges are of the automatic dial type. Subscribers in the Far North have access to the outside world via CNT-operated long-distance toll centres at Whitehorse, Y.T., Fort Nelson, B.C., and Hay River and Inuvik, N.W.T. In some areas, such as the Mackenzie River Delta, short-haul long-distance calls are handled by automatic toll ticketing similar to that used by the large telephone companies in the major southern Canadian centres. A recent multi-million-dollar expansion program has brought telephone service to an additional 50 communities in Newfoundland and many isolated settlements now have as modern a telephone service as any in Canada.

The latest telephone innovation is the electronic exchange and the touch-tone telephone, developed in the United States. The dial is replaced by push-buttons, each of which, when pressed, emits a tone that activates the exchange to contact the desired party. Electronic exchanges are now being used in some areas by the Trans-Canada Telephone System and CN-CP Telecommunications are using a similar touch-tone application in their Broadband Exchange Service (see p. 880).

Public Telegraph Service.—Canada's telegraph systems are operated by CN and CP Telecommunications. These companies operate telegraph offices, often amalgamated, in all 10 provinces and in the Yukon and Northwest Territories and messages can be sent to and from any point in Canada or throughout the world via the overseas cable services (see pp. 887-888). At one time, much of the CNT and CPT revenue came from telegraph message traffic but the proportion now accounted for by such traffic is only about 20 p.c. Even so, the reduced telegraph message traffic is handled by the most up-to-date facilities. Messages are transmitted by teleprinter and facsimile equipment, and telegraph networks over which public messages flow are controlled by computers. In other words, messages are taken in and forwarded automatically in accordance with special programs stored in the computer's memory. The computer determines where the message is to be sent and sends it as soon as the circuits are free.

Telex Service.—Telex, by far the largest teletypewriter service in Canada, is provided by CN-CP Telecommunications. Its network of more than 16,300 subscribers in Canada interconnects with the Western Union Telex network in the United States and with European and world-wide networks of at least 250,000 subscribers. Telex is a direct distance dial teleprinter system which permits a subscriber to directly dial any other subscriber on the network. Two speeds are offered to customers—66 words a minute and 100 words a minute—at costs determined on a time-used and distance basis. There is no minimum charge. CN-CP Telecommunications were the first to introduce this dial-and-type service in Canada 12 years ago.

TWX, similar to Telex, is provided by the major telephone companies. One transmission speed of 100 words a minute is offered on this service, the network of which consists of some 2,700 subscribers in Canada and interconnects with the American Telephone and Telegraph network of some 50,000 TWX subscribers and also with the European and world-wide Telex network outside the North American network.

A medium-speed Telex service is offered exclusively by CN-CP Telecommunications, operating in the speed range of up to almost 300 words a minute. The subscriber may own his computer or data sending-receiving equipment or may lease it from CN-CP. This service provides a direct dial interconnection with subscribers anywhere in Canada to achieve a medium-speed range transfer of data from one location to another. The monthly rates to subscribers are the same as the standard-speed Telex service, that is, are based on time used and distance. A six-level code, an eight-level code and punched computer cards can operate on the medium-speed service.

Broadband Exchange Service.—In 1967, CN-CP Telecommunications introduced an automatic switching system of the most advanced design, known as Broadband Exchange Service, which has moved Canada into a new era of extremely high quality and very rapid communications. It is the first such system to operate in Canada and the second in the world. Broadband has more than tripled the fastest conventional machine-to-machine transmission. Furthermore, it has the capability, upon customer demand, of transmitting computer data at 51,000 words a minute, or more than 50 times faster than the top speed reached by conventional switched networks. The Royal Canadian Mounted Police was the first organization to be tied into this supersonic network, using it for intricate and high-quality transmission of fingerprints, photographs and documents between headquarters at Ottawa and divisional headquarters at Montreal, Toronto, Winnipeg, Edmonton, Regina, Vancouver, Fredericton, Halifax and St. John's.

The name, Broadband Exchange Service, is derived from the actual system since subscribers eventually will be able to select various bandwidths, depending upon their communications needs. The broader the bandwidth, the faster the speed of transmission. CN-CP will offer four bandwidths: four and eight kilocycles for voice, facsimile and data (from 1,000 to 3,000 words a minute); 16 kilocycles for high fidelity radio program transmission and facsimile; and 48 kilocycles for high speed computer-to-computer data exchange (51,000 words a minute) and high speed facsimile. The four kilocycle bandwidth is now operational and the other bandwidths will become available upon customer demand.

The initial system consists of 10 switching centres across Canada with concentrators or, more aptly, "links" to other communities connecting these other communities to the main network. Broadband uses the most advanced techniques known to ensure error-free data transmission. The exchanges are entirely electronic, using dry reeds and without moving parts. Present-day exchange centres, including telephone exchanges, use electro-mechanical switching equipment which can occasionally cause disturbances and errors while transmitting computer data. Without mechanical equipment in the Broadband exchanges, transmission disturbance is virtually eliminated. Transmission is carried by the CNT-CPT microwave system using frequency diversity techniques to provide a high degree of reliability. In other words, the transmission is carried twice both ways over different circuits at the same time, one being the back-up system for the other.

Each subscriber has in his office a voice-data subset—a most advanced telephone instrument which, with the flick of a button, can change from voice communication to transmission of computer data. The subset features push-button “dialling” and the customer, to reach a distant point, simply pushes the buttons in a series of seven digits. The first three digits pressed designate the distant exchange, the fourth digit indicates the desired bandwidth and the last three digits are for the line of the desired party. A re-ring button is included so that the customer may signal the distant party to revert to voice communication during or after sending computer data. A feature of Broadband is abbreviated keying, where customers may contact frequently called stations by pushing a two-digit code instead of the normal seven. Broadband will make distant connections, including keying time, within five seconds, or two seconds on the special “hot line” service. Actual connection time after keying or “dialling” is less than two seconds. Another feature of Broadband is conference calling, where a subscriber, by pushing a two-digit code, will automatically contact a pre-determined list of parties needed for the conference. Subscribers are charged on a “pay-as-you-use” basis.

Data-Phone Service.—The major Canadian telephone systems operate Data-Phone service which transmits data from punched cards, tape or magnetic tape between two or more machines or computers. It takes pulses from punched cards or tape-data machines and transforms them into tones which are sent over telephone circuits or leased private lines. The subscriber pays for the line which is being used at regular long-distance rates. Data-Phone transmits at a speed of 1,200 bits a second or 1,000 words a minute.

Data-Line Service.—Data-Line service was put into operation by the Trans-Canada Telephone System late in 1968, primarily for customers who wished to be connected to time-sharing computers. Using the normal telephone lines and exchanges, this service has the capability of transmitting computer data from 1,000 words a minute to a new offering in 1969 of 50,000 words a minute. The subscriber may use his own send-and-receive equipment or he may lease the equipment from the Trans-Canada Telephone System. Charges are based on a flat rate and depend upon the bandwidth used.

Wide Area Telephone Service.—Wide Area Telephone Service (WATS), operated by the Trans-Canada Telephone System, provides dial-type telephone communication from one WATS zone directly to another long-distance zone. In other words, the subscriber has a wider area that he may call directly without going through the long-distance operator or Direct Distance Dialing, and he may select any or all of the WATS zones he wishes. The customer has an access line to a dial exchange office for use only in originating WATS calls. INWATS, the reverse series to WATS, is expected to be introduced by the Trans-Canada Telephone System in 1969. Subscribers are charged on a measured time-period rate and an additional hourly rate. The measured time-period is 10 hours of accumulated time in each month and the additional hourly rate applies to the time used above the measured time.

Hot-Line Service.—A new service offered in 1969 by CN-CP Telecommunications and Western Union is the Hot-Line service where companies in Toronto or Montreal may talk to their offices in New York City by simply picking up the handset of the telephone. When a customer picks up his handset, the exchange equipment will seek out the proper telephone at the other end. If all the circuits are in use at the time of calling, the caller will hang up and as soon as a circuit is free, the equipment will make the connection and ring the telephone set at each end. Subscribers are charged on a time-used basis.

Private Wire Teletype Systems.—A transformation has been gradually taking place in private wire systems. Most major Canadian firms with large communications requirements in years past found that private wire systems best suited their needs—that

is, their own private teletype network rented to them by telecommunications companies. Although private wire services are still a significant part of business for the telecommunications industry, prime communications users who must communicate with many stations across the country have been moving to the newer computer-controlled transmissions systems.

Computer-Controlled Transmission Systems.—CNT, CPT and the Trans-Canada Telephone System all have in operation store and forward message switching computers which control the flow of message traffic. CNT pioneered in the uses of message switching computers in Canada, having operated in this field since 1964. Trans-Canada Telephone System inaugurated a computer-controlled system late in 1968 and CPT expect to have a system in operation in 1969. The telephone companies have switching centres located at Vancouver, Calgary, Edmonton, Regina, Winnipeg, Montreal and at Toronto, their primary centre. This computer-controlled system converts transmission codes and speeds and also determines where messages are to be sent.

CNT's system provides a switching medium for Air Canada, CP Air and CN administrative message traffic and also controls and transmits information on CN's reservation system. When a railway customer wishes to make a reservation, a computer card is marked and inserted into a card reader. Within seconds, a reply will return via a teleprinter confirming the reservation. Air Canada's "Notice to Airmen" (NOTAM) project is also handled by this system where particular flight plans, runway conditions and navigational aids are stored in Air Canada's computer and given out to pilots across the country when a special code is dialed on teletype machines. A third-generation computer installed for CNT in 1968 will perform major store and forward message switching functions for the Meteorological Branch of the Department of Transport. Once the computer finds a weather report from any one of the 175 DOT weather stations throughout Canada, it will tell the station equipment to transmit the report into the computer and then it determines where and at what time of the day the information is to be sent.

Commercial telegrams are to be switched across the country by CNT's third-generation message switching computer beginning in 1969; this will undoubtedly be the most important development in telegraph service since the Morse key gave way to reperforator equipment.

Satellite Communications.—Increasing activity in the Canadian Arctic and sub-Arctic, where communities are being expanded and new ones formed, as well as forecasts of the telecommunications needs of all of Canada, has prompted the telecommunications industry and the Federal Government to consider a domestic satellite system. In 1966 a proposal from the Niagara Television Limited and the Power Corporation of Canada Limited was submitted to the (then) Board of Broadcast Governors for a satellite system to distribute television programs for a third national television network. In March of 1967 the Trans-Canada Telephone System and CN-CP Telecommunications proposed to the Government a domestic satellite telecommunications system to carry television, telephone calls, data and other telecommunications services. In that same year RCA Victor Company Limited issued a proposal giving definite design criteria for a communications satellite within the capabilities of Canadian industry. In 1968, Northern Electric Company announced an agreement with Canadair Limited and Hughes Aircraft of California, to form a group interested in designing and building equipment for satellite communications. For some time this subject was also under study by the Department of Transport and the result of this study was presented to the Government in 1967. By July of 1967 an intense interest had developed in the potential of a domestic satellite system and the Prime Minister announced the creation of a Task Force, under the direction of the Science Secretariat, to advise on satellite policy in general and, in particular, on the use of satellite technology for domestic communications.

On Mar. 28, 1968, the Government released a White Paper entitled "A Domestic Satellite Communication System for Canada" which reviewed the main factors involved in planning and establishing such a system. It was based to a large extent on the recommendations of the Task Force. The White Paper stated that it was the Government's conclusion that a domestic satellite communication system is of vital importance for the growth, prosperity and unity of Canada, and should be established as a matter of priority. It also stated the Government's intention to form a corporation by special statute of Parliament to develop, own and operate both the satellites and earth stations of the system and the pattern of ownership, which was announced later, is to be shared by the Government, the public and private industry.

The Task Force commissioned Northern Electric Company Limited and RCA Victor Limited to prepare a report on their version of a communications satellite that would fulfil Canada's needs. The report was presented to the Task Force in November 1968 for evaluation and at the time of this writing had not been made public. However, the Task Force has stated that it would like to have the satellite system operational in early 1972, which was the target date set in its report.

In any event, Canada must act as soon as possible before the limited number of good orbital positions are lost by default to other countries. The whole of Canada is visible in space from that part of the equatorial orbital plane lying between 96° and 116° West Longitude. This forms a 20° arc and contains the satellite positions most desirable for Canadian domestic service. The satellite or satellites would be able to maintain a stationary orbit at an altitude of 22,300 miles which means that they would rotate with the earth every 24 hours and therefore at any particular time of the day be over the same spot on earth.

Basically, satellite communication is just one long microwave link. The clarity and strength of transmission provided by such a satellite would be comparable to that of existing microwave systems; only with respect to time required for transmission from an originating earth station to a satellite and back to another receiving earth station would there be a noticeable difference. Because of the 22,300-mile altitude of the satellite, the two-way transit time would be about 600 milli-seconds or six tenths of a second. This delay would be of no concern for one-way transmission services such as television, but it must be taken into account in the case of two-way voice circuits. To minimize the time effects, there must be an avoidance of tandem connections on space facilities and, wherever possible, the operation of voice circuits with one direction via satellite and the other via ground facilities.

These first-generation satellites would be nearing the end of their life cycle five years after they are put into operation and undoubtedly additional satellite capacity would be required by then. The scope, capacity and design of the second-generation Canadian satellite would depend on technical developments and traffic requirements during the intervening years. Canada's microwave, land-line and troposcatter systems will continue to be the backbone of telecommunications services for many years to come but satellite communications, properly integrated with land facilities, will make it possible to reach all areas to which service has not yet been economically feasible.

Subsection 1.—Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Parliament are subject to the jurisdiction of the Canadian Transport Commission in the matter of rates and practices under the provisions of the Railway Act (see p. 876); other companies are responsible to provincial regulatory bodies. International telegraph and telephone communications are handled subject to the International Telecommunication Convention

and the Regulations thereunder and/or under regional agreements. Tolls charged to the public for radio communication service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Radio communications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations and also under the Canada Shipping Act and Ship Station Radio Regulations. In addition, radio communication matters are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; the International Convention for the Safety of Life at Sea; the Inter-American Telecommunication Convention and the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and also in accordance with such regional agreements as the Agreement between Canada and the United States for the Promotion of Safety on the Great Lakes by Means of Radio, the Agreement between Canada and the United States relating to the Co-ordination and Use of Radio Frequencies Above Thirty Megacycles per Second, the Inter-American Radio Agreement, the North American Regional Broadcasting Agreement, the Canada-USA Television Agreement and the Canada-USA FM Agreement (see also p. 889).

National radio broadcasting in Canada came under Government regulation in 1932 when the Canadian Radio Broadcasting Commission was established under the Canadian Radio Broadcasting Act. In 1936 the Canadian Broadcasting Act was passed, replacing the Commission by the Canadian Broadcasting Corporation to which it gave wide powers in the operation of a national broadcasting system and gave to the Minister of Transport the technical control of all broadcasting stations. In 1958, the Government established a Board of Broadcast Governors which had the function of regulating the establishment and operation of networks of radio and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. New broadcasting legislation was passed by Parliament in 1968 and proclaimed Apr. 1, 1968, enunciating a new broadcasting policy for Canada and amending the Radio Act. Under this new Broadcasting Act the Canadian Radio-Television Commission succeeded the Board of Broadcast Governors. For details, see pp. 894-895.

The powers, duties and functions of the Minister of Transport under the Radio Act and Telegraphs Act and his responsibilities for telecommunications matters under the Railway Act were transferred to the Postmaster General, who is the Minister designate of the new Department of Communications (see p. 889).

Subsection 2.—Telephone and Telegraph Statistics

Telephone Statistics.—In 1967 there were 2,281 telephone systems operating in Canada compared with 2,310 in 1966, of these systems, 2,057 reported in 1967 and 2,130 in 1966. Co-operative systems in rural districts decreased in number from 1,906 to 1,848 in the same comparison and incorporated companies from 137 to 130. The largest of the incorporated companies, The Bell Telephone Company of Canada, which operates throughout the greater part of Ontario and Quebec and in Newfoundland and the Northwest Territories, served 62 p.c. of all the telephones in Canada in both years and the British Columbia Telephone Company, also shareholder-owned, served 9.7 p.c. of the total in 1967. The number of telephones in use continues to increase at the rate of about 6 p.c. annually.

1.—Pole-Line and Wire Mileage and Number of Telephones in Use, 1958-67

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Systems Reporting	Route Mileage	Length of Wire	Telephones in Use			
				Business	Residential	Total	Per 100 Population
	No.	miles	miles	No.	No.	No.	No.
1958.....	2,619	280,884	20,250,410	1,486,393	3,631,900	5,118,293	30.0
1959.....	2,605	267,737	22,791,129	1,568,735	3,870,288	5,439,023	31.2
1960.....	2,558	274,855	25,333,802	1,673,915	4,054,252	5,728,167	32.2
1961.....	2,509	306,167	26,986,478	1,729,599	4,284,416	6,014,015	32.6
1962.....	2,430	314,523	28,930,413	1,816,895	4,512,553	6,329,448	33.7
1963.....	2,296	284,202	31,267,977	1,910,178	4,746,435	6,656,613	34.9
1964.....	2,421	281,036	33,731,622	2,016,182	5,003,192	7,019,374	36.1
1965.....	2,330	283,473	36,666,557	2,142,256	5,302,815	7,445,071	38.1
1966.....	2,130 ⁺	290,936 ⁺	40,586,184	2,286,753	5,595,875	7,882,628	38.9
1967.....	2,057	295,532	43,959,453	2,423,308	5,935,115	8,358,423	40.5

2.—Telephones in Use, by Province, 1967

Province or Territory	On Individual Lines		On 2- and 4-Party Lines		On Rural Lines		Public Pay Telephones
	Business	Residential	Business	Residential	Business	Residential	
	No.	No.	No.	No.	No.	No.	
Newfoundland.....	10,265	37,606	1,230	24,520	119	4,932	867
Prince Edward Island..	2,238	10,309	54	2,134	263	7,559	215
Nova Scotia.....	15,157	112,266	660	15,317	1,019	28,904	3,251
New Brunswick.....	15,470	73,966	622	24,589	777	21,870	2,228
Quebec.....	191,757	1,012,813	6,375	219,263	6,589	116,758	23,108
Ontario.....	256,293	1,342,577	4,796	376,309	7,825	178,065	25,844
Manitoba.....	33,753	182,564	369	21,955	2,477	39,057	2,825
Saskatchewan.....	31,498	167,686	28	486	3,149	58,245	3,088
Alberta.....	57,549	314,402	676	17,314	1,574	25,858	5,052
British Columbia.....	70,744	219,076	348	235,531	3,031	70,596	6,553
Yukon Territory.....	880	885	136	1,437	2	3	51
Northwest Territories..	980	1,415	156	1,290	27	9	77
Canada.....	686,584	3,475,565	15,448	940,145	26,852	551,856	73,159
	Private Branch Exchanges		Extensions		Mobile	Total	Telephones per 100 Population
	Business	Residential	Business	Residential			
	No.	No.	No.	No.			
Newfoundland.....	11,121	—	8,303	8,512	82	107,557	21.4
Prince Edward Island..	1,914	—	2,633	2,187	—	29,506	26.8
Nova Scotia.....	24,255	—	22,780	24,265	—	247,874	32.6
New Brunswick.....	19,548	—	14,361	20,929	1,311	195,671	31.4
Quebec.....	295,506	19	165,188	263,128	361	2,300,865	38.9
Ontario.....	446,261	103	204,867	433,605	1,181	3,277,726	45.2
Manitoba.....	45,444	—	22,350	34,060	125	384,979	39.8
Saskatchewan.....	28,429	—	17,918	25,067	655	336,247	35.1
Alberta.....	82,096	—	35,206	61,434	2,465	603,626	39.9
British Columbia.....	101,535	—	60,503	93,901	2,594	864,412	43.4
Yukon Territory.....	470	—	598	179	34	4,675	31.2
Northwest Territories..	490	—	588	160	93	5,285	17.6
Canada.....	1,057,069	122	555,295	967,427	8,901	8,358,423	40.5

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of long-distance calls, gives their total volume of business. Estimates are included for the smaller systems.

3.—Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1958-67

NOTE.—Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Local Calls	Long-Distance Calls	Total Calls	Total Calls per Capita	Average Calls per Telephone		
					Local	Long-Distance	Total
	'000	'000	'000	No.	No.	No.	No.
1958.....	8,513,455	194,186	8,707,641	511	1,663	37.9	1,701
1959.....	9,044,825	205,395	9,250,220	530	1,663	37.9	1,701
1960.....	9,364,586	215,275	9,579,861	537	1,635	37.6	1,672
1961.....	10,242,657	226,258	10,468,915	568	1,703	37.6	1,741
1962.....	10,558,129	250,239	10,808,368	576	1,668	40.0	1,708
1963.....	11,065,030	257,548	11,322,578	593	1,662	39.0	1,701
1964.....	11,658,113	281,239	11,939,352	614	1,661	40.1	1,701
1965.....	12,138,243	301,614	12,439,857	628	1,630	40.5	1,671
1966.....	12,846,178	323,325	13,169,503	650	1,630	41.1	1,671
1967.....	13,053,115	357,414	13,410,529	650	1,562	42.7	1,605

The steady increases in capitalization, revenue and expenditure of telephone companies together with the figures of number of employees and salaries and wages paid are shown for the years 1958-67 in Table 4. Provincial figures for 1967 are given in Table 5.

4.—Financial Statistics of Telephone Systems, 1958-67

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Capital Stock ¹	Long-Term Debt	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages ²
	\$	\$	\$	\$	\$	No.	\$
1958.....	639,824,492	845,613,559	2,202,747,303	507,689,602	451,672,799	61,400	234,298,163
1959.....	730,874,613	916,791,207	2,444,576,788	582,262,550	509,727,426	58,826	240,691,244
1960.....	758,291,439	1,068,399,476	2,692,484,052	627,982,847	549,042,848	57,670	247,128,467
1961.....	879,424,405	1,134,866,419	2,926,527,459	679,306,194	590,428,169	56,322	254,207,734
1962.....	1,012,220,461	1,151,169,891	3,192,229,994	733,294,451	636,542,442	58,091	269,284,720
1963.....	1,207,147,639	1,144,518,306	3,510,479,137	787,374,716	687,272,971	58,416	288,772,585
1964.....	1,328,991,574	1,241,015,012	3,808,675,460	860,207,384	746,503,960	60,829	306,454,089
1965.....	1,380,189,560	1,348,911,971	4,127,386,680	948,177,117	821,204,894	63,467	333,364,967
1966.....	1,575,983,073	1,667,390,608	4,544,521,877	1,048,837,049	912,452,623	68,154	374,372,064
1967.....	1,624,202,963	1,898,269,911	5,010,998,761	1,163,855,575	975,438,821	68,431	408,066,433

¹ Includes premium on capital stock.

² Full-time and part-time.

5.—Financial Statistics of Telephone Systems, by Province, 1967

Province or Territory	Capital Stock ¹	Cost of Plant	Revenue	Expenditure	Full-Time Employees	Salaries and Wages ²
	\$	\$	\$	\$	No.	\$
Newfoundland.....	16,221,591	45,931,159	10,855,532	10,064,948	883	4,269,423
Prince Edward Island.....	5,124,711	14,454,883	2,974,401	2,562,675	206	803,611
Nova Scotia.....	51,938,590	146,574,012	32,839,134	27,752,463	2,644	11,933,890
New Brunswick.....	46,121,978	136,280,541	29,579,604	25,345,145	1,979	10,059,206
Quebec ³	1,248,729,003	3,149,315,493	754,173,548	641,762,330	19,353	121,881,167
Ontario.....	30,048,082	77,458,188	21,263,944	17,630,811	21,222	131,936,293
Manitoba.....	322,174	231,713,473	44,199,585	41,220,063	4,036	22,469,979
Saskatchewan.....	47,705,942	234,983,565	49,458,780	39,150,060	3,254	14,728,960
Alberta.....	2,877,521	420,401,161	91,583,298	89,122,522	7,259	41,664,160
British Columbia.....	175,113,371	553,886,286	126,927,749	80,827,863	7,585	48,306,100
Northwest Territories.....	—	—	—	—	10	113,644
Canada.....	1,624,202,963	5,010,998,761	1,163,855,575	975,438,821	68,431	408,066,433

¹ Includes premium on capital stock.

² Full-time and part-time.

³ Includes data of The Bell Telephone Company, which operates in Quebec, Ontario, Newfoundland and the Northwest Territories.

Telegraph Statistics.—There were nine telegraph and cable companies operating in Canada during 1967 but, as already stated, telegraph service is provided mainly by the telecommunications departments of the two major railway companies (see also p. 879). The number of telegrams sent continues to decline year by year, giving way to other types of message transmission, but the number of cablegrams sent has been rising. The business of telegraph and cable companies appears to be changing from one of handling messages directly to one of leasing equipment for the transmission of messages by others. Revenues from the latter source have been rising over the past several years and have been the main factor in the steady advance in total operating revenues. Total cost of property and equipment for all telegraph and cable companies was \$494,486,481 in 1967, increasing from \$474,826,188 in 1966.

6.—Summary Statistics of Canadian Telegraphs, 1958-67

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Operating Revenues	Operating Expenses	Net Operating Revenue	Pole-Line Mileage	Wire Mileage	Employees ¹	Telegrams	Cablegrams ²	Money Transfers
	\$	\$	\$	miles	miles	No.	No.	No.	\$
1958 . . .	47,633,991	39,908,538	7,725,453	47,495	464,661	10,587	17,296,786	2,398,459	24,434,887
1959 . . .	52,962,913	43,511,666	9,451,247	47,535	486,875	10,586	16,390,997	2,487,358	25,589,067
1960 . . .	58,546,167	45,538,063	13,008,104	48,159	510,640	10,279	15,546,292	2,533,014	25,134,534
1961 . . .	64,053,626	51,735,006	12,318,620	48,675	524,720	9,997	15,138,706	2,662,931	25,041,156
1962 . . .	71,379,074	56,451,679	14,927,395	48,381	534,074	10,069	14,451,416	2,606,103	28,060,157
1963 . . .	73,611,349	60,256,828	13,354,521	49,536	532,551	9,826	13,338,941	2,668,796	30,133,340
1964 . . .	78,743,332	63,865,422	14,877,910	49,730	537,438	9,431	12,946,062	2,751,623	32,378,177
1965 . . .	86,087,398	68,869,393	17,218,005	49,623	544,759	9,270	12,788,585	3,037,939	38,865,118
1966 . . .	95,478,146	74,684,229	20,793,917	50,538	547,652	9,161	11,455,849	3,232,073	36,139,334
1967 . . .	104,504,533	78,715,818	25,788,715	50,161	557,354	8,961	10,474,908	3,575,806	36,014,438

¹ Excludes commission operators.

² Includes wireless messages and transatlantic Telex messages.

Subsection 3.—Overseas Telecommunications Services

The Canadian Overseas Telecommunication Corporation* was established in 1950 to maintain and operate external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and overseas points; to make use of all developments in cable and radio transmission and reception for external telecommunication services; and to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other nations.

The services currently being provided are: direct telegraph, telephone and Telex communications between Canada and Argentina, Australia, Barbados, Belgium, Bermuda, Brazil, Britain, Denmark, Finland, France, Germany, Iceland, Italy, Jamaica, Japan, the Netherlands, New Zealand, Norway, the Soviet Union, Sweden and Switzerland; direct telephone and telegraph services with the islands of St. Pierre and Miquelon; direct telephone service with Greece, Austria and Spain; direct telegraph and Telex services with Peru and Telex with Portugal. Datel 600 service is in operation between Canada and Switzerland and between Canada and Britain; it is expected that this service will be available with other countries in due course. International Telex service is available with 145 countries.

The first transatlantic telephone cable, a joint project with the British Post Office, the American Telephone and Telegraph Company, Eastern Telephone and Telegraph Company and the Corporation, was brought into service in 1956. Apart from normal use of its system for public telephone, telegraph message traffic and Telex service, capacity is available for private leased circuits.

* As of Apr. 1, 1969, the Corporation reports to Parliament through the Minister of Communications.

Since 1961 the following cables have been brought into service: the Canada-Britain 80-circuit telephone cable (CANTAT); the Commonwealth Trans-Pacific 80-circuit cable—a four party enterprise of Canada, Britain, New Zealand and Australia—connecting Vancouver and New Zealand and Australia via Hawaii and Fiji (COMPAC); the South East Asia Commonwealth 80-circuit cable—a six-party enterprise of Canada, Britain, New Zealand, Australia, Malaysia and Singapore—connecting Australia, Hong Kong, Singapore and Kuala Lumpur via New Guinea and Guam (SEACOM), collectively forming part of the round-the-world Commonwealth Telephone Cable System; a number of circuits for Canadian purposes have been acquired in telephone cable systems connecting Bermuda and the United States and Jamaica and the United States. Currently under construction is a large-capacity telephone cable between Nova Scotia and Bermuda (CANBER).

The Corporation also operates direct circuits via satellite with Belgium, Britain, France, Germany, Greece, Italy, the Netherlands, Spain and Switzerland. The earth station constructed for the Department of Transport (DOT) at Mill Village, N.S., for research and experimentation with respect to satellites was brought into service in 1966 for commercial use and at present carries 240 telephone circuits for North American-European traffic via Intelsat I (Early Bird). The Corporation's own earth station, Mill Village 2, which came into service early in 1969, will operate with the larger-capacity satellites of the Intelsat III series, due to replace Intelsat I. The DOT station will then revert to its original purpose but will also serve as a standby for commercial operations. The Corporation at present operates direct circuits via the Pacific satellite with Australia through the American-owned earth station at Brewster Flat, Washington, pending the erection of an earth station on the West Coast of Canada.

Canada, represented by the Canadian Overseas Telecommunication Corporation, is a member of the Interim Communications Satellite Committee (ICSC) set up by the participating nations for the development and operation of a global communications satellite system. The Corporation is also represented on the Commonwealth Telecommunications Council.

Under a long-term agreement, the Corporation has under charter from the DOT the CCGS *John Cabot*, a combined ice-breaker/cable repair ship, used mainly for repairing the cables in the western North Atlantic Ocean. It also operates a cable depot at St. John's, Nfld.

7.—External Cables Landed in Canada, 1968

Company and Station	Cables		Nautical Miles	
	No.		No.	
Canadian Overseas Telecommunication Corporation (COTC)—				
Port Alberni, B.C. to Sydney, Australia via Hawaii, Fiji Islands and New Zealand.....	1		8,232	
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland ¹	2		2,280	
Hampden, Nfld. to Oban, Scotland (CANTAT).....	1		2,010	
Hampden, Nfld. to Vestmannaeyjar, Iceland via Greenland.....	1		1,657	
Western Union International Inc. (WUI)—				
Bay Roberts, Nfld. to Hammil, N.Y., U.S.A.....	2		2,778	
Bay Roberts, Nfld. to Azores.....	1		1,343	
Eastern Telephone and Telegraph Company (ET&T)—				
Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland ¹	2		2,280	
Sydney Mines, N.S. via Clarenville, Nfld. to Penmarch, France.....	2		2,400	
New Brunswick Telephone Company Limited (NBTEL)—				
Campobello Island, N.B. to Lubec, Me., U.S.A.....	1		0.3	

¹ Twin cable from Clarenville, Nfld. to Oban, Scotland, and single cable from Clarenville, Nfld. via Terrenceville, Nfld. to Sydney Mines, N.S.

² Licensed for operation by two carriers—COTC and ET&T.

Increased demand for all types of overseas telecommunication services resulted in the COTC reporting a net profit of over \$3,990,000 for the year ended Mar. 31, 1968. Income for the year amounted to \$24,502,031.

Subsection 4.—Federal Government Civil Telecommunications and Electronics Services

Telecommunications policy and planning administered by the Government Telecommunications Policy and Administration Bureau, formerly under the jurisdiction of the Department of Transport, has been transferred to the Department of Communications (as of Apr. 1, 1969). For the time being, the functions and responsibilities of the Bureau remain unchanged and may be summarized as: (1) development of policy and plans with respect to national and international telecommunications by satellites, cables and other media including relations with the Canadian Overseas Telecommunication Corporation, and participation in the work of the International Telecommunication Union and its subsidiary organs; (2) forward planning for the development of economical and effective telecommunications facilities to meet the administrative and general needs of Federal Government departments and agencies throughout Canada, compatible with the improvement of public services, and to arrange for these facilities; (3) planning of emergency measures and administration of the Emergency National Telecommunication Organization (ENTO); (4) development and maintenance within the Bureau of a centre of competence in the latest telecommunications technology; and (5) administration of the Radio Act and Regulations including allocation and assignment of radio frequencies, radio provisions of the Canada Shipping Act, Ship Station Radio Regulations, the Telegraph Act and the Regulations thereunder covering the licensing of overseas submarine cables.

Telecommunications operations include: (1) research into and development of new and improved communication and electronic equipment and systems in support of aeronautical, marine, meteorological and other services; (2) construction, maintenance and operation of radio aids to marine and air navigation and of radio communication stations, including procurement of the necessary equipment; and (3) administration of the leasing of land-line telecommunication circuits, equipment and related facilities.

Licensing and Regulation of Radio Stations.—Under the Radio Act and the Canada Shipping Act it is provided that radio stations employing a form of Hertzian wave transmission, including television and radar, be licensed by the (now) Department of Communications unless otherwise exempted by regulation. Licensing, which provides basic control over the right to establish a radio station, involves the assigning of specific frequencies to each station. Frequencies are assigned to many types of services on a shared non-interference basis. Engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenna system must be approved by the Department of Communications and, before a new broadcasting station can be licensed or before modifications can be made to an existing station, notification is sent to the signatory countries of the North American Regional Broadcasting Agreement, in the case of AM broadcasting stations, and to the United States under the Canada-USA Television Agreement and the Canada-USA FM Agreement, for television and FM broadcasting stations, respectively. The setting of standards for the equipment, installation and operation of a station provides control for efficient use of the radio spectrum. A further control is the requirement that operating personnel be subject to examination and certification.

From time to time, the Department of Communications establishes standards governing the technical suitability of radio equipment and radio systems for licensing in Canada. These standards, which are called Radio Standards Specifications, Radio Standards Procedures and Standard Radio System Plans, are issued by the Department in co-ordination with representatives of industry. Before a licence may be issued, the radio equipment to be used must comply with the technical requirements of the applicable Radio Standards Specification or Procedure, in which case they will be listed in the Radio Equipment List as type-approved or technically acceptable. Briefs supporting a request for technical appraisal of a radio apparatus may be prepared and submitted by a duly qualified engineer or the necessary tests may be conducted, for a fee, at the Department's Radio Regulations Engineering Laboratory, Ottawa. Over 2,000 units were listed as type-approved or technically acceptable during the year ended Mar. 31, 1968.

Ten fixed and two mobile monitoring stations are maintained at suitable points across Canada to observe actual radio spectrum conditions using a variety of modern electronic aids, their purpose being to ensure that radio communications are conducted according to regulatory procedures and to determine causes of harmful interference.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that meets the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. All Canadian and foreign ships are subject to inspection to ensure that they conform to the requirements of the Safety of Life at Sea Convention.

Standards have been developed for the installation of aircraft radio stations specifying the techniques and materials that may be used, and inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. In-flight inspections of the radio communications and navigational aspects of proposed new air-carrier operations, encompassing both land and oceanic routes, are made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile radio stations and the regulations made under the Radio Act provide for the examination and certification of operators, both professional and amateur.

Number of Radio Stations Licensed in Canada.—The number of licences in force for radio stations in Canada during the year ended Mar. 31, 1968, was 219,590 compared with 191,849 in 1966-67. These figures include stations operated by federal, provincial and municipal government departments, stations on ships and aircraft registered in Canada, and mobile stations operated in public and private land mobile services but do not include private commercial broadcasting licences.

<i>Item</i>	<i>Year Ended—</i>	
	<i>Mar. 31, 1967</i>	<i>Mar. 31, 1968</i>
New applications received.....	24,447	30,878
Authorizations granted.....	23,665	28,279
Licence amendments.....	25,614	34,985
Licences cancelled.....	10,481	10,970
Amateur experimental service licences.....	12,120	12,502
General radio service licences in force (valid for three years).....	50,859	58,844
General radio service licences issued during year (new or renewed).....	20,250	19,553
Tourist radio service licences.....	7,126	10,164
Total licences in force.....	191,849	219,590
Certificates of Registration issued to U.S. licensees.....	2,442	2,697
Net increase in licences in force over preceding year.....	29,009	27,741

Investigation and Suppression of Radio Interference.—The Radio Act provides penalties for selling or using apparatus liable to cause interference to radio reception. Standards are developed and approvals for exemption from licensing issued for certain classes of each equipment. The Department of Communications also provides a country-wide interference service using special investigation equipment for the purpose of tracing sources of interference and recommending cures for interference to broadcast, television and other radio reception. Ninety-eight cars equipped for measuring and locating sources of interference operate from offices located in 35 cities throughout Canada.

Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order and Radio Noise Limits Order Amended. This amendment, introduced on Sept. 24, 1964, designates the limits for noise from television receivers manufactured in Canada or imported into Canada on or after Apr. 1, 1966 (amended to Apr. 1, 1972 on July 26, 1967). Certain low-power radio transmitting

and receiving equipment, such as garage door controls, may be exempted from licensing under Section 2A(1) of the Radio Act. When a particular model has been exempted, it may be operated without the radio station licence.

Meteorological Communications.—Weather stations operated by the Meteorological Branch of the federal Department of Transport throughout Canada are linked coast-to-coast by means of teletype and, in the remote northern areas, by radio or radio-teletype. The land-line teletype circuits are leased from commercial companies and operated by the Meteorological Branch while the radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the Department.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial telegraph or radio facilities to the nearest station on the teletype network for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast teletype systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These centres handle the distribution of weather information within Canada, including the Arctic, and also effect international exchange with the United States and through them, with many other countries. Altogether, the Meteorological Branch uses 58,500 miles of teletype circuits, connecting 384 teletype offices.

In addition, weather charts are transmitted over two facsimile networks from the Central Analysis Office at Montreal to weather offices across Canada. Radio facsimile broadcasts of these charts can be recorded at Arctic stations and on ships at sea. Charts prepared at the various Weather Central Offices in Canada are also transmitted to their respective regional areas. Altogether, the Meteorological Branch utilizes 19,000 miles of facsimile circuits, serving 102 offices.

Radio Aids to Marine and Aeronautical Navigation.—Federal services in aid of marine and aeronautical navigation are outlined in the following paragraphs; details may be obtained on request from the Department of Transport, Ottawa. Six regional offices, located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., and Moncton, N.B., carry out the construction and operations of the facilities.

Marine Navigation.—Radio aids to marine navigation are provided for radio-equipped Canadian vessels and foreign ships using Canadian waters. This safety and communications service for shipping covers the East and West Coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather reports, storm warnings and notices of dangers to navigation. Ships at sea may obtain medical advice from any coast station. The stations carry out communications by radiotelegraph and/or radiotelephone and most of them provide connections to land telephone lines. Halifax (VCS) and Vancouver (VAI) stations provide long-range radiotelegraph and radiotelephone services to ships. Coast stations on Hudson Bay and Hudson Strait, in addition to their regular services, provide commercial communications for posts of the Hudson's Bay Company and various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions, etc.

Automatic radiobeacon stations are maintained on the East and West Coasts, the St. Lawrence River and Gulf, the Great Lakes and Hudson Bay and Strait, giving navigational aid to mariners by transmitting signals on which bearings may be taken. These stations are arranged, where possible, in groups up to a maximum of six stations transmitting in sequence on a common frequency, the sequence being repeated continually regardless of weather conditions.

Loran is a long-range radio aid to marine and air navigation providing accurate fixes at distances of up to 750 miles by day and 1,500 miles by night. Two Loran stations operate

in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific Oceans. *Decca* is a short-range radio aid to navigation providing accurate fixes at distances of up to 250 miles. Four chains of *Decca* stations are in operation—the Newfoundland chain, the Nova Scotia chain, the Anticosti chain and the Cabot Strait chain—giving service to ships off Newfoundland and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and important buoys are fitted with radar reflectors to increase their radar visibility. Two shore-based radar installations are in operation—one at Camperdown near the mouth of Halifax Harbour and the other on the Lion's Gate Bridge across the entrance to Vancouver Harbour. Low-powered transceivers are provided for use in emergencies at lighthouses, particularly at locations that would otherwise be completely cut off from assistance in case of illness.

*Aeronautical Navigation.**—Radio aids to air navigation are provided from coast to coast and from the Canada–United States border to the Arctic along and off the airways, and are used by Canadian and foreign air carriers flying over Canadian territory. Low-frequency radio range stations, located approximately every hundred miles along airways, provide specific track guidance to pilots by means of audible signals which may also be used to obtain direction finding bearings. In addition, radiotelephone communications are provided by 120 ground stations, by which means pilots may obtain weather data, air traffic control instructions and other information concerning the safety of flights. Fifty-two very high frequency omni-directional ranges (VOR) are in operation, a type of facility that enables the pilot to select any desired course. These omni-directional ranges have permitted the establishment of VOR airways across Canada and on a number of trans-border routes in co-operation with the United States. Additional installations are under construction.

There are 275 aeronautical radiobeacon stations which provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. Fan markers operating on very high frequencies are usually placed on an airway to inform the pilot when he may safely lose altitude or to indicate accurately the distance from an airport. Station location markers, similar to fan markers, are installed at most radio range sites; they enable a pilot to determine when he is exactly over the station.

Airport and airway surveillance radars (150 nautical-mile) are in operation at 16 airports for air traffic control purposes. Precision approach radars are in operation at eight major airports. Instrument landing systems (ILS) provide radio signals which permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. Forty-one instrument landing systems are in operation.

Aeronautical radio communications stations are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication with domestic and international air carriers. Thirteen international communications stations, giving coverage from coast to coast and over the oceans, form a major contribution on the part of Canada to international aviation.

Subsection 5.—Public and Private Commercial Microwave Facilities

Canada, because of its population distribution and the vast areas served by microwave communication links, ranks second highest among the world's users of microwave communications systems on a per capita/per mile basis. Increasing demand for television

* See also the item on Air Traffic Control, pp. 863-865.

outlets necessitated the extension of microwave routes to provide interconnections for the CBC English and French and private networks and recently these routes have been up-graded to enable the transmission of colour television which started in the autumn of 1966. With the use of more automated equipment by industry and various services, associated data and control information must be transmitted at rapid speeds over microwave radio-relay to widespread areas throughout the country. This Subsection gives a summary of the facilities existing or under construction at the end of March 1968.

Railways.—The Telecommunications Departments of the Canadian National and Canadian Pacific Railway Companies have placed in operation a microwave system extending from Montreal to the Pacific Coast, which is used for television, telephone and data relay purposes. They also operate microwave facilities linking the Province of Quebec with the Maritime Provinces and Newfoundland and a major expansion of microwave facilities in Newfoundland has been undertaken by Canadian National Telecommunications (CNT). In addition, CNT has installed a microwave system between Alberta and the Yukon Territory which carries telephone and data traffic and serves both civil and military organizations in the area. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatter system connects Alberta and the Northwest Territories. This system is also intended to provide communication for civil and military use in the Far North. The Quebec North Shore Labrador Railways has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railways operates a microwave installation connecting northern Ontario and James Bay, also for purposes of military and civil communication. The Pacific and Great Eastern Railway makes extensive use of 6,000 Mc/s microwave facilities linking Vancouver with Prince George and Dawson Creek, B.C.

Telephones.—The Trans-Canada Telephone System consists of eight provincial and private systems collectively providing a transcontinental microwave system for the purpose of carrying telephone, television, data and other types of communication services. Extensive microwave systems are utilized within the respective provinces for civil and military communications or television relay purposes. Major expansion has taken place in each province, greatly increasing the number of areas served and system capacity for all types of communication requirements. Tropospheric scatter systems are employed to provide beyond line-of-sight transmissions especially to the Far North; these are used for both civil and military applications.

The telephone companies of the three Prairie Provinces are constructing a major microwave system extending from Winnipeg to Edmonton, to form part of a projected second transcontinental microwave system operated by the telephone companies. The British Columbia Telephone Company has installed a major trunk system from Prince Rupert to Prince George, which is linked through Prince George with the transcontinental system in the southern part of the province. A microwave system links Mill Village communication satellite earth station, near Liverpool, N.S., with the trunk route system of the Maritime Telegraph and Telephone Company.

Television.—The two main television interests in Canada—the CBC and the CTV Television Network Limited—lease private microwave facilities for the relay of television programs from coast to coast. In addition, studio transmitter links are used by various television stations where the television transmitter is situated some distance from the studio and interconnection is required. In sparsely populated areas, off-the-air pick-up signals from primary television stations are sometimes relayed via microwave to rebroadcasting sites. Microwave facilities are also used in connection with portable and mobile television pick-up where program material is intended for the main studio. Recently, both network facilities and local studio transmitter links have been up-graded to enable the transmission of colour television.

Industrial.—Although many firms utilize public communication facilities on a lease basis, some organizations have installed private microwave systems to provide voice, teletype and control data for various purposes. The British Columbia Hydro and Power Authority, the Calgary Power Corporation, The Hydro-Electric Power Commission of Ontario, the Quebec Hydro-Electric Commission and Manitoba Hydro use a considerable number of microwave relay systems for important control and communication purposes. For example, Hydro-Quebec has greatly expanded its hydro power-generating capacity and new microwave routes have been added to permit a central control of the various generating stations. The British Columbia Hydro and Power Authority is installing facilities to link the Vancouver area with Peace River, Mica Creek and the Bonneville Power Administration in the State of Washington, and also for system control in the Vancouver area. The Hydro-Electric Power Commission of Ontario is constructing an extensive microwave system to provide important control, monitoring and communications with all their facilities in southwestern Ontario.

Instructional.—The Department of Communications has opened the 2,600 MHz. microwave band for use by the various educational authorities in Canada for an instructional TV system. Some systems have now been licensed and others are being planned. The largest system is located at Calgary and it provides TV communications to 24 schools.

Subsection 6.—Miscellaneous Radio Communication Services

In addition to radio communication services provided by the Federal Government, extensive radio communication systems have been established in the provinces, mainly for police, highway and forestry protection purposes. Municipal government departments have steadily increased their use of radio to facilitate operations, particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical also make extensive use of radio for communication purposes.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both mobile and point-to-point radio fields.

The telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Restricted common-carrier mobile radio service (this service does not permit interconnection with the over-all telephone system but only with specific dispatchers) is available in most major cities in Canada as well as in a number of smaller urban centres. The latter service is provided by telephone companies as well as by other organizations. Low-power radio stations may be licensed to permit short-distance personal and private business radiotelephone communications.

Subsection 7.—Radio and Television Broadcasting*

Broadcasting in Canada has developed over a period of some 48 years as a combination of public and private enterprise. Since the opening program from the first radio station was beamed into a few Montreal homes in 1918, the role of the radio and television program in the daily life of the Canadian family has grown to startling prominence. Today, radio service reaches 99 p.c. and television service over 96 p.c. of the Canadian population.

To have become such an integral force in the daily life of the nation, broadcasting had to learn the needs of the people and how to serve them. Two 'official' languages

* Textual material was revised by the Information Services of the Canadian Broadcasting Corporation and statistical data by the Transportation Division of the Dominion Bureau of Statistics.

forming two distinct cultures had to be served independently but without diminishing the concept of national unity. Dozens of other smaller groups, distinct in culture and frequently dwelling in the same radio or TV coverage area but in separate communities with widely divergent program interests, had to be served. Physical problems of distance and geography had to be overcome. It requires some hundreds of radio transmitters and TV stations and satellites to reach a population distributed across a 4,000-mile southern frontier, through seven time zones and a variety of topographical and climatic regions, and scattered northwest through thousands of square miles to the shores of the Arctic Ocean. Not only do these people have local service that is a reflection of life in their own districts, but by means of thousands of miles of land-lines for radio networks and microwave circuits for television nearly every Canadian may, at the same time, listen or watch as an event of national interest takes place.

The Canadian Broadcasting Corporation is a publicly owned corporation established by an Act of the Canadian Parliament to provide the national broadcasting service in Canada. Its radio and television facilities extend from Atlantic to Pacific and into the Arctic Circle. The CBC was created in 1936, replacing an earlier public broadcasting agency which had operated since 1932. It is financed mainly by public funds voted annually by Parliament but supplementary revenue is obtained from commercial advertising. As a publicly owned corporation, the CBC is responsible to Parliament and reports on its operations each year through a Cabinet Minister designated in the Broadcasting Act (at present the Secretary of State). The CBC head office is in Ottawa. The main production centre for English networks is in Toronto, and for French networks in Montreal, with regional centres across the country.

The regulation of all Canadian broadcasting stations, both public and private, was a CBC function until 1958, when a separate regulatory body, the Board of Broadcast Governors, was created. In 1966, the Government published a White Paper on Broadcasting proposing amending legislation with respect to the administration and regulation of broadcasting. As a result of these proposals, a new Broadcasting Act was passed by Parliament on Feb. 7, 1968 (SC 1967-68, c. 25) establishing the Canadian Radio-Television Commission (CRTC), consisting of five full-time members and ten part-time members, all appointed by the Governor in Council; recruitment and appointment of the officers and employees of the CRTC is the responsibility of the Public Service Commission. The Act states that there shall be an Executive Committee of the Commission, consisting of the five full-time members, which will exercise the powers conferred on it by the Act and submit to each meeting of the Commission minutes of its proceedings since the last preceding meeting of the Commission.

Subject to the provisions of the Broadcasting Act and the Radio Act and any directions issued from time to time by the Governor in Council under the authority of the Broadcasting Act, the Commission regulates and supervises all aspects of the Canadian broadcasting system with a view to implementing the policy enunciated in Section 2 of the Act. The Commission is the licensing authority for the Canadian broadcasting system. The Minister of Communications is responsible for the regulation and control of all technical matters relating to the planning for and the construction of broadcasting facilities but CRTC is responsible for all other matters.

An applicant for licence to establish and operate an AM, FM or TV broadcasting station, a community antenna television system, or a network files completed application forms with the Secretary of the CRTC. If found to be reasonably complete and technically acceptable, the application is accepted by the Commission and a public notice is issued in the *Canada Gazette* and in one or more newspapers of general circulation within the area normally served or to be served by such a station or system. The same procedure applies to an application for the issue of a renewal licence or the amendment of an existing licence.

Broadcasting Facilities.—As of Mar. 1, 1969, the following numbers of broadcasting stations were in operation in Canada:—

	<i>CBC</i>	<i>Private</i>	<i>Total</i>
AM stations.....	31	267	298
Low-power relay transmitters.....	202	—	202
FM stations.....	7	70	77
Short-wave stations.....	5	6	11
TV stations (including rebroadcasting stations).....	92	239	331

All but 43 of the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over networks operated by the CBC. Of the unaffiliated private television stations, 11 form the CTV Television Network Limited; the others are independent of network affiliation.

Operations of the Canadian Broadcasting Corporation, 1967-68

Centennial year was a year of program challenge and achievement for the CBC—a year that re-emphasized the role of the CBC as an instrument of national purpose and broadcasting. Some 1,500 hours of special Centennial programs and coverage were broadcast on CBC French and English radio and television, and thousands of Centennial items were broadcast to other countries by the CBC International Service. The CBC commissioned new works by Canadian writers and composers, issued special recordings and publications, and sponsored a variety of public concerts and competitions. A Centennial Technical Centre was established in Montreal for the assembly, maintenance and shipment of specially designed equipment packages and for the training and assignment of technical crews covering events across the country. At Expo 67, the International Broadcasting Centre, built and operated by the CBC, provided radio and television facilities for broadcasters from all over the world.

Other notable program projects during the year included coverage of the two-week 1967 Pan-American Games in Winnipeg, and the production of the Canadian program segments for the first live global telecast by satellite, *Our World*, a project of the European Broadcasting Union. The full program was carried on the CBC English and French television networks.

In 1967 and 1968 there was extensive live coverage of the Canadian political scene: the Progressive Conservative leadership convention, the Toronto and Ottawa constitutional conferences, the Liberal leadership convention, the first national television debate among Canadian party leaders (a joint CBC-CTV production), and the federal election in June 1968. A number of feature films were produced for television and for release to movie theatres, by the CBC itself or in co-operation with the National Film Board. The CBC's French television network completed a 39-week historical drama serial in colour, in co-operation with European broadcasting organizations. There was also extensive live coverage of the Olympic Games in Mexico, and a 10-year contract was signed for CBC coverage of major athletic events at Canadian universities.

Colour programming was increased and, by the opening of the 1968-69 program season, some 80 or 90 p.c. of prime-time evening programming was in colour on both English and French networks. The CBC Research Department expanded its English TV network audience panel to cover a nine-month period annually, and established a parallel operation to obtain representative audience reaction to French network programs.

The CBC's regional program centres produced a wide range of programs for their own communities, contributed to the national networks and continued the growing exchange of programs among regions. French and English AM radio networks offered a comprehensive service of news and current affairs coverage, special-interest programs, music, drama, sports and popular entertainment. FM radio emphasized music but also offered a variety of spoken word material including discussion and lecture series.

The all-night program service of music and news carried on most CBC radio stations as a function of the Emergency Broadcasting Plan was discontinued in March 1968 in line with government economy measures. However, all network connections were maintained in standby condition, capable of emergency network service on short notice.

Coverage and Facilities.—As of Mar. 31, 1968, CBC television was within reach of 96.6 p.c. of all Canadians and CBC radio reached 98.7 p.c. Facilities to extend television coverage during the year included new transmitters at Grand Falls and three other Newfoundland locations. The Corporation's French-language station at Moncton was increased to maximum power to provide improved service to a large area of New Brunswick, Nova Scotia and Prince Edward Island. In Quebec, a new transmitter began operation in French in the St. Georges de Beauce area, and in Ontario a new French-language station was opened at Elliot Lake. A complex of four stations in north-central Ontario now brings television coverage to a large, hitherto unserved area. In Alberta, new rebroadcasting stations at Lac-La-Biche, Hinton and Jasper were brought into operation. In British Columbia, new stations began operation at Bowen Island, Squamish, Crawford Bay and Creston and the transmitters at Trail and Nelson were increased in power to provide improved service.

Frontier Coverage Packages—low-power TV transmitters operating four hours a day and broadcasting a selection of national service programs provided on videotape—are in operation at Yellowknife, N.W.T.; Lynn Lake, Man.; and Havre St. Pierre, Que. Both technically and in terms of audience acceptance, this coverage experiment appears to be working successfully and, if these findings are confirmed, plans to extend the FCP service could bring television to some 40 isolated locations in the Canadian North by the end of 1972. A satellite distribution system could eventually provide live service to such communities. The CBC continues to keep abreast of developments in this field (see pp. 882-883).

The limited first-stage colour conversion authorized by government policy was completed during the year; the next phase, which will include more colour production facilities in the network centres at Toronto and Montreal and the conversion of regional production facilities, will start when government funds become available.

In August 1968, CBC acquired ownership of its former English-language affiliate in Charlottetown, CFCY-TV, and its subsidiary station in New Glasgow, N.S. These stations now operate under the call letters CBCT and CBCT-1.

In radio, a number of new low-power relay transmitters began operation in 1968, distributed through Newfoundland, New Brunswick, Quebec, Ontario, Manitoba, British Columbia and the Yukon. In Vancouver, the CBC began operation of CBUF-FM, a maximum-power French-language station, and authorization was received and plans begun for a French-language AM transmitter at Windsor, Ont. The overcrowding of the standard AM broadcast band and the resulting coverage problems led to the experimental use of FM for a low-power unattended radio service at Maniwaki, Que., and to applications for relocation of the Sackville and Vancouver AM transmitters.

Planning continued for the consolidation of scattered CBC facilities in Montreal, Toronto and Vancouver. New radio studios and office buildings were completed at Goose Bay, Fredericton and Prince Rupert, and work on similar facilities was started at Sydney. In Ottawa, work was continued on a new transmitter site to accommodate all local TV and FM transmitters, both CBC and privately owned.

CBC Northern Service.—The Northern Service was ten years in operation on Nov. 10, 1968. It broadcasts to 29 communities and in the northern areas of five provinces and in the Yukon and Northwest Territories and on shortwave to the High Arctic. It has program centres at Happy Valley in Labrador, at Yellowknife, Inuvik and Frobisher Bay in the Northwest Territories, at Whitehorse in Yukon Territory, and at Churchill in Manitoba; all except Frobisher Bay are connected to the national radio networks.

Northern Service radio schedules combine local programs—particularly news, public affairs, public service information and personal messages—with a variety of national network programs. Development continues of community programs for Indian, Eskimo and metis listeners in their own languages. In the Mackenzie Delta and Yellowknife areas, discussions are broadcast among Indians and Eskimos in their own languages, in co-operation with the Indian-Eskimo Association. Frobisher Bay's open-line program in Eskimo retained its enthusiastic following. News editors at Whitehorse and Yellowknife provided regional news services for the Yukon and Mackenzie networks and reported on northern news to newsrooms "outside". *Indian Magazine*, a Northern Service program linking the widely separated Indian peoples of Canada, has acquired a wider and wider audience, and in 1968 became part of the schedule of the full national English radio network. The CBC Northern Service is also responsible for the English and French program schedules of the Iron Ore Company's television stations at Labrador City, Nfld., and Schefferville, Que.

Armed Forces Service.—Through the CBC Armed Forces Service and the Department of National Defence, Canadian servicemen and their dependants in Europe, Africa, Asia and Northern Canada and on Canadian Forces ships at sea are provided with CBC radio and television programs. Recorded and shortwave radio programs are supplied to broadcasting stations of the Canadian Forces in West Germany, the managers and program directors of which are CBC personnel. A weekly package of television programs is distributed among remote Canadian Forces bases in Northern Canada and abroad. The Department of National Defence and the CBC organize concert parties to entertain members of the forces and their dependants at military bases in Canada and abroad and radio and television programs are produced from these concerts for use on CBC networks in Canada.

External Services.—The various CBC foreign operations were grouped into a single External Services Division in 1968. The Division includes the CBC International Service, the Overseas and Foreign Relations Department, CBC offices in foreign countries, and the Export Sales Department.

During 1967, the CBC International Service concentrated on covering Expo 67 and all aspects of the Centennial celebrations for its international audience. More than 46,000 program hours of recorded Canadian music were shipped to radio organizations all over the world, four times the amount shipped in 1966. Continuing their collaboration which resulted in the commercial release of "Music and Musicians of Canada", a 17-record collection of Canadian music, the International Service and RCA Victor also made available a nine-record album of Canadian folk songs, a recording of Calixa Lavalee's "The Widow", and the first commercial recording by the Montreal Symphony Orchestra. In television, the Service regularly distributed its *Canada Magazine*, reflecting various aspects of Canadian life, to more than 30 countries. In the shortwave radio service, news, commentary and information from Canada was broadcast daily in English, French, German, Spanish, Portuguese, Czech, Slovak, Hungarian, Polish, Ukrainian and Russian. Work continued in 1968 to expand and improve the shortwave transmitting facilities at Sackville, N.B., shared by the International Service and the Northern and Armed Forces Service. During the crisis in Czechoslovakia in the late summer of 1968, all the language sections of the International Service broadcast special reports and coverage, and evidence indicated that Canadian shortwave broadcasts were not among those jammed by the Soviet Union.

The Overseas and Foreign Relations Department co-operated with the Canadian International Development Agency and the Ryerson Institute of Technology in providing on-the-job broadcast training for 52 students from 19 countries. Visits of radio and television producers, commentators and broadcast executives from 75 countries were taken care of during Centennial year and the Department was host to the annual meetings in Montreal of La Communauté radiophonique des programmes de langue française and La Communauté des télévisions francophones, and to production meetings of the European Broadcasting Union during the planning of the first live world television program *Our*

World. Contacts and co-operation were increased with other international broadcasting organizations including the Asian Broadcasting Union, the Commonwealth Broadcasting Conference, and the Organization International de Radio et Télévision. Documentaries continued to be produced for showing in the member countries of Intertel and co-productions with European and American broadcasters and with such agencies as UNICEF were also undertaken. An agreement was signed between CBC and the U.S.S.R. Council of Ministers Committee for Radio and Television Broadcasting providing for an exchange of programs of interest to Canadian and Soviet audiences and allowing the CBC to produce TV films in the Soviet Union with all-Canadian production crews or with the assistance of Soviet staff.

Twenty-two CBC programs were accepted for presentation or won awards in international festivals. More than 300 radio and television items for magazine programs were exchanged between European countries and the CBC's French networks. Combined programs sales to foreign countries for the English and French networks were in excess of \$340,000.

Finance.—Operating expenses of the CBC for the year ended Mar. 31, 1968, totalled \$185,885,439, an increase of \$31,644,840 over the previous year. The largest single item of the increase was \$21,437,626 spent on programs; this increase was attributable to special Centennial telecasts, increased salaries resulting from negotiated union agreements, and general price increases. Parliamentary grants totalled \$140,147,000 of which \$2,889,905 went back to the Receiver-General as repayment of capital loans to the CBC, leaving the net operating funds received from the Federal Government at \$137,257,095. Depreciation, included as an operating cost not recoverable from Parliamentary grants, brought the net cost of operations to \$145,684,000. Gross advertising revenue amounted to \$38,734,295 and other revenue to \$1,466,507. Capital assets, after accumulated depreciation, totalled \$87,918,259.

8.—Financial Statement of CBC Operations, Years Ended Mar. 31, 1966-68

Item	1965-66	1966-67	1967-68
	\$	\$	\$
Expenses—			
Production and Distribution—			
Cost of programs.....	85,656,953	98,001,881	119,439,507
Network distribution.....	11,536,284	12,149,163	14,137,682
Station transmission.....	5,509,995	5,906,199	7,827,549
Payment to private stations.....	4,590,870	5,010,405	5,464,020
Commissions to agencies and networks.....	3,944,840	4,143,701	4,435,999
Emergency broadcasting.....	887,043	931,238	1,008,578
Operational supervision and services.....	11,176,524	15,752,108	18,303,581
Selling and Administration—			
Selling expense.....	2,125,359	2,416,259	2,695,722
Engineering and development.....	1,104,872	1,308,541	1,485,361
Management and central services.....	5,904,756	6,418,146	7,327,819
Interest on loans.....	1,009,323	2,202,958	3,759,621
Totals, Expenses.....	133,446,819	154,240,599	185,885,439
Income—			
Parliamentary grant.....	94,350,134	111,032,015	136,612,794
Advertising revenue (gross).....	33,562,816	35,153,014	38,734,295
Interest on investments.....	357,006	498,844	573,568
Miscellaneous.....	438,211	544,152	892,939
Totals, Income.....	128,708,167	147,228,025	176,813,596
Depreciation and amortization included with total expenses.....	4,738,652	7,012,574	9,071,843
	133,446,819	154,240,599	185,885,439

Operations of Private Broadcasting Stations

Canada's privately owned stations, which are dependent entirely on advertising revenue, provide alternate radio and television service to more than 17,000,000 viewers and listeners. They offer a varied and comprehensive local service to hundreds of communities and many of them are outlets for the CBC network's national service. Although the first private station opened in 1919, legislation recognizing private broadcasting as an integral part of the Canadian scheme came only in 1958. By 1968 there were 264 AM, 68 FM and 60 TV stations, representing a capital investment of \$200,000,000 and transmitting 2,500,000 hours of programming annually. These stations employ about 10,100 persons and pay salaries of close to \$72,000,000, including payments to freelance talent. Some 95 p.c. of the private stations are members of The Canadian Association of Broadcasters, which has offices in Ottawa, Toronto and Montreal. CAB's Radio Bureau Division produces the non-partisan public service series *Report From Parliament Hill*, featuring talks by Members of Parliament. The Program Exchange Department in Toronto gathers high-quality Canadian and foreign programs and distributes them to interested member stations. Other noteworthy CAB projects include recent five-year sponsorship of the Dominion Drama Festival and the continuing provision of 'in-station' training for students from other countries.

Statistics of the Broadcasting Industry

Financial and other statistics of the radio and television broadcasting industry are obtained by the Dominion Bureau of Statistics in co-operation with the Canadian Radio-Television Commission; summary figures for private and CBC sectors are given in Table 9 for 1965-67.

In 1967, 305 private radio stations and 66 television stations reported to DBS. The operating revenue of the broadcasting industry in 1967 amounted to \$214,239,000, an increase of 11.3 p.c. over the previous year. Of the total, radio broadcasting accounted for \$90,700,000 or 42.3 p.c. and television broadcasting for \$123,500,000 or 57.5 p.c.; in 1966 radio received \$81,700,000 or 42.5 p.c. and television \$110,700,000 or 57.5 p.c. Revenue from network and national advertising represented 63.5 p.c. of the total broadcasting revenue and revenue from local advertising 36.5 p.c.; network and national advertising increased by 10.8 p.c., local advertising by 10.5 p.c. and other non-broadcasting revenue by 21.7 p.c. over 1966. Operating expenses in 1967 at \$332,500,000 were 16.6 p.c. higher than in 1966. The growth of revenues exceeded the growth of expenses and resulted in an operating profit of \$27,500,000 in 1967 compared with one of \$25,400,000 in 1966. After adjustment on account of other income and expenses and income taxes, the final net profit of the private sector of the broadcasting industry for 1967 was \$15,569,000 compared with \$15,050,000 in 1966.

9.—Revenue, Expense and Employee Statistics of the Radio and Television Broadcasting Industry, 1965-67

Item	1965		1966		1967	
	Private Stations	CBC	Private Stations	CBC	Private Stations	CBC
	\$	\$	\$	\$	\$	\$
Operating Revenue and Grants						
Broadcasting revenue from network and national advertising.....	78,413,420	23,581,000	89,584,326	24,827,000	99,949,239	26,810,000
Broadcasting revenue from local advertising.....	58,757,439	1,447,000	64,847,218	1,180,000	71,644,550	1,307,000
Non-broadcasting operating revenue.	8,623,933	794,000	10,906,766	1,035,000	12,345,158	2,183,000
Grants received ¹	—	99,089,000	—	118,044,000	—	145,685,000
Totals, Operating Revenue and Grants.....	145,794,792	124,911,000	165,338,310	145,086,000	183,938,947	175,985,000

For footnote, see end of table.

9.—Revenue, Expense and Employee Statistics of the Radio and Television Broadcasting Industry, 1965-67—concluded

Item	1965		1966		1967	
	Private Stations	CBC	Private Stations	CBC	Private Stations	CBC
	\$	\$	\$	\$	\$	\$
Operating Expenses¹						
Representative agency commissions	7,379,878	24,000	8,008,549	177,000	8,562,245	—
Interest charges	2,647,457	1,009,000	2,424,737	2,203,000	2,810,036	3,760,000
Depreciation and amortization of leasehold improvements	9,251,532	4,739,000	10,202,319	7,013,000	11,195,865	9,072,000
Rent, repairs and maintenance, insurance, property taxes, fuel and electricity	9,897,891	7,016,000	11,659,374	7,171,000	12,915,768	9,633,000
Salaries and wages	49,799,400	52,422,000	56,144,694	60,223,000	62,639,016	74,462,000
Staff benefits	1,798,836	3,947,000	2,328,897	4,425,000	2,667,430	5,654,000
Artists' and other talent fees	5,253,509	13,692,000	5,399,451	17,002,000	6,115,303	17,560,000
Performing rights	2,951,057	7,010,000	3,380,116	4,500,000	3,912,535	5,112,000
Telephone and telegraph and outside services	8,360,613	12,254,000	9,730,493	17,690,000	11,202,214	20,346,000
Films, tapes, recordings—rental and purchased	11,405,955	14,283,000	13,490,458	12,333,000	16,388,235	15,494,000
Advertising, promotion and travel	7,749,728	2,856,000	8,048,921	6,433,000	8,773,468	6,511,000
Taxes and licences (other than income or property)	1,892,280	25,000	2,273,377	—	2,455,868	—
Office and other operating expenses	5,890,871	5,634,000	6,873,516	5,916,000	6,837,675	8,381,000
Totals, Operating Expenses	124,279,007	124,911,000	139,964,902	145,086,000	156,465,658	175,985,000
Net operating income including grants	21,515,785	—	25,373,408	—	27,473,289	—
Net of other income and expenses	613,030	—	1,055,756	—	1,634,678	—
Less: provision for income taxes	8,186,415	—	11,378,220	—	13,538,629	—
Net income after taxes	13,942,400	—	15,060,944	—	15,569,338	—
Average monthly number of employees	8,945	7,947	9,450	8,475	9,911	9,035

¹ The CBC charges its operations with depreciation, but deducts the charge on its published statements; the charge so made has been added to the government grant. ² Excludes advertising agency commissions, estimated to be \$17,585,786 in 1965, \$20,298,498 in 1966 and \$23,164,429 in 1967.

Section 2.—Postal Service

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with speed and security. To carry out these duties, it maintains thousands of post offices and utilizes air, rail, road and water transportation facilities. In addition, associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting of CQD articles and the transaction of money-order business. Because of its transcontinental facilities, the Post Office also assists other government departments with such tasks as selling unemployment insurance stamps and hunting permits, collecting government annuity payments, distributing income tax forms and Public Service employment application forms, and displaying government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all the functions of a city office. In larger urban areas, postal stations have full functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery.

Much sophisticated automatic equipment has been installed in Canada's larger post offices, which could be described as complex semi-automated plants. Such devices include conveyors and chutes, parcel and bag sorting machines, photo-electric counters, intercom

systems, observation gallery telephone systems and industrial music. Outside the post office building are found such innovations as mailmobiles, automatic stamp-vending machines and curbside mail boxes.

The operating service of the Post Office Department is organized into 14 districts, each under a district director. These district directors and the postmasters, Toronto, Montreal, Vancouver, Winnipeg and Ottawa, report directly to the Assistant Deputy Postmaster General Operations, who has the responsibility of conducting the normal field operations of the Postal Service. The operating and support functions required in the provision of postal service to the public are the responsibility of the local postmasters who receive technical and administrative assistance from district offices at strategic points.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont. (the most southerly inhabited point of Canada), to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily, intersected by branch and connecting lines radiating to every quarter and linking up with the United States airmail system. First-class domestic mail is carried by air between one Canadian point and another, whenever delivery can thus be expedited. Air stage service provides the only means of communication for many areas in the hinterland. There are approximately 46,000 miles of airmail and air stage routes. However, the railways are still the principal means of distant mail transport.

At Mar. 31, 1968, there were 10,838 post offices in operation. Letter-carrier delivery, performed in 247 urban centres, employed 8,605 uniformed carriers. Some 605 side services transport mail between post offices, railway stations, steamer wharves and airports, and 1,535 stage services convey mail to and from post offices not located on railway lines. Transportation of mail by motor vehicle on highways is expanding and about 590 such services were in operation in 1968, many of them replacing or reducing conveyance by rail. In 1968 there were 1,046 city mail services transporting mail to and from post offices and postal stations, collecting mail from street letter boxes and delivering parcel post.

Revenue and expenditure of the Post Office Department for the five years ended Mar. 31, 1968 are shown in Table 10; gross revenue receipts are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during 1967-68 was \$118,131,756, and receipts from postage meter or postage register impressions and postage paid in cash by other means amounted to \$188,270,075.

10.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1964-68

NOTE.—Figures from 1868 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Gross Revenue	Net Revenue ¹	Expenditure ²	Deficit
	\$	\$	\$	\$
1964.....	235,807,940	200,774,264	206,900,000	-37,507,200
1965.....	263,704,342	230,488,693	210,458,700	-11,479,200
1966.....	275,994,208	237,538,585	240,206,458	-30,668,200
1967.....	295,529,358	253,429,237	301,193,559	-47,764,322
1968.....	327,224,461	281,765,993	348,957,037	-67,191,044

¹ Gross revenue less commissions and allowances to postmasters and other small items.
of semi-staff and staff post offices.

² Excludes rental

In the year ended Mar. 31, 1968, post office money orders, issued for any amount not exceeding \$100 and payable in almost any country of the world, were sold at more than 9,361 post offices and money orders payable in Canada only, for amounts not exceeding \$15.99, were sold at some 1,018 additional post offices. Table 11 shows the amount of money order business conducted by the Postal Service in recent years.

11.—Operations of the Money Order System, Years Ended Mar. 31, 1964-68

Year	Money Order Offices in Canada	Money Orders Issued in Canada	Value of Orders Issued in Canada	Value Payable in—		Value of Orders Issued in Other Countries, Payable in Canada
				Canada	Other Countries	
	No.	No.	\$	\$	\$	\$
1964.....	10,690	56,544,267	927,750,738	904,166,425	23,584,313	7,681,041
1965.....	10,668	55,603,081	943,684,714	919,131,578	24,550,136	9,285,388
1966.....	10,575	55,831,820	965,095,390	940,661,264	24,434,126	10,098,579
1967.....	10,495	55,827,447	1,013,189,273	986,396,684	26,792,588	8,511,265
1968.....	10,379	56,757,934	1,054,674,979	1,025,989,765	28,685,214	9,032,090

Section 3.—The Press*

The freedom of the public in Canada is strenuously exercised by an omnipresent press. Daily newspapers published in the country in 1968 numbered 118, counting morning and evening editions separately. Combined circulation was about 4,527,000—83 p.c. in English and 17 p.c. in French. Publishers' surveys show that each newspaper is read by an average of three persons.

Daily newspaper advertising revenue in 1967 was \$239,810,000 and circulation revenue was \$89,214,000. By comparison, advertising revenue of 305 private radio stations in Canada in 1967 was \$86,703,000 and of 66 private television stations \$84,891,000. There were 13 daily newspapers with circulation in excess of 100,000, accounting for about 54 p.c. of total circulation. There were 12 dailies published in the French language, 10 of them located in Quebec. Although the circulation of daily newspapers blankets the more populous areas well beyond publishing points, smaller cities and towns and rural areas are also served by close to 850 weekly newspapers catering to local interests and exercising important local influence. The Canadian society is also enriched by 82 ethnic daily or weekly newspapers published in many languages, often sprinkled with English.

About 60 p.c. of Canada's daily newspapers are privately owned or independent. There are three major newspaper chains in the country, owned by Southam Press Ltd. (10 dailies), Thomson Newspapers Ltd. (27 dailies) and FP Publications Ltd. (eight dailies). Both Southam and Thomson Newspapers are publicly owned companies with shares traded on Canadian stock exchanges. Papers in the Thomson chain are concentrated in the smaller cities. FP accounts for about 19 p.c. of total daily circulation, Southam for 18 p.c. and Thomson for about 8 p.c.

In addition to their own news-gathering staffs and facilities, Canadian newspapers subscribe to a number of syndicated agencies and wire services, the largest being Canadian Press which is a co-operative agency owned and operated by Canadian dailies. Largely by teletype and wirephoto transmission, it provides its 103 member newspapers with world and Canadian news and also serves weekly newspapers and radio and television stations. CP has its own news-gathering staff and each member newspaper provides the agency with important local news for transmission to fellow members and members share the cost in ratio to the size of population of the cities in which they publish.

CP carries world news from Reuters, the British agency, and from Associated Press, the United States co-operative, and these agencies are offered CP news on a reciprocal basis. CP maintains a French-language service in Quebec and translation services for both English and French Canada.

United Press International of Canada, the second major news wire service in Canada, is a private company and an affiliate of United Press International World Service. It

* An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to 1958.

provides Canadian and international news and pictures to about 80 subscribers in Canada and is an outlet for Canadian news through United Press International facilities throughout the world. Certain foreign newspapers maintain bureaus in Ottawa and elsewhere in Canada to collect and interpret Canadian news.

Press Statistics.—The following tables are based on data estimated from *Canadian Advertising*. Circulation figures are given for daily English-language and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation. For these, ABC 'net paid' figures have been used; 'controlled' (free) distribution newspapers are not included. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable. Data for 1967 were not compiled.

12.—Estimated Numbers and Circulations of Reporting English-Language, French-Language and Foreign-Language Newspapers, by Province, 1966 and 1968

Province or Territory	1966				1968			
	Daily		Weekly ¹	Weekend	Daily		Weekly ¹	Weekend
	No.	Circulation ²	No.	No.	No.	Circulation ²	No.	No.
ENGLISH-LANGUAGE NEWSPAPERS								
Newfoundland.....	3	30,821	4	1	3	33,323	4	1
Prince Edward Island.....	3	28,916	—	—	3	28,917	—	—
Nova Scotia.....	6	159,525	32	—	6	162,206	31	—
New Brunswick.....	5	96,180	15	—	5	101,105	15	—
Quebec.....	4	340,299	20	1	4	340,993	19	1
Ontario.....	47	1,805,079	246	4	47	1,892,731	244	4
Manitoba.....	7	220,011	62	—	7	233,887	63	—
Saskatchewan.....	4	125,920	112	—	4	135,541	99	—
Alberta.....	7	290,951	88	1	7	317,999	91	—
British Columbia.....	14	497,959	94	—	14	517,072	97	—
Yukon and Northwest Territories.....	1	..	4	—	1	..	2	—
Totals.....	101	3,595,661	677	7	101	3,763,774	665	6
FRENCH-LANGUAGE NEWSPAPERS³								
Nova Scotia.....	—	—	1	—	—	—	1	—
New Brunswick.....	1	10,216	3	—	1	7,776	3	—
Quebec.....	10	691,803	140	16	10	716,478	164	17
Ontario.....	1	38,048	6	—	1	39,080	5	—
Manitoba.....	—	—	1	—	—	—	1	—
Saskatchewan.....	—	—	6	—	—	—	6	—
Alberta.....	—	—	1	—	—	—	2	—
Totals.....	12	740,067	158	16	12	763,334	182	17
FOREIGN-LANGUAGE NEWSPAPERS⁴								
Quebec.....	—	—	14	—	—	—	13	—
Ontario.....	2	..	46	—	2	..	46	—
Manitoba.....	—	..	13	—	—	..	13	—
Alberta.....	—	..	1	—	—	..	1	—
British Columbia.....	3	..	2	—	3	..	4	—
Totals.....	5	..	76	—	5	..	77	—

¹ Includes semi-weeklies, tri-weeklies and bi-weeklies.

² Circulation not reported for all newspapers.

³ Includes bilinguals.

⁴ All daily and weekly foreign-language publications given here are considered to be newspapers.

13. -Estimated Numbers and Circulations of Reporting English-Language and French-Language Newspapers Published in Urban Centres of Over 30,000 Population, 1966 and 1968.

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Urban Centre	Households (Census 1966)	1966			1968		
		Daily		Weekly	Daily		Weekly
		No.	No.	Circulation	No.	No.	Circulation	No.
ENGLISH-LANGUAGE NEWSPAPERS							
Belleville, Ont.	9,287	1	14,896	—	1	15,081	—
Brampton, Ont.	9,184	1	7,048	1 ^r	1	7,771	1
Brantford, Ont.	17,395	1	23,919	—	1	25,604	—
Burlington, Ont.	17,171	—	—	1	—	—	2
Calgary, Alta.	94,941	2	120,854	1	2	130,621	1
Chatham, Ont.	9,304	1	14,458	—	1	15,020	—
Cornwall, Ont.	11,783	1	13,515	—	1	13,883	—
Dartmouth, N.S.	13,937	—	—	1	—	—	1
Edmonton, Alta.	105,016	1	130,656	2	1	145,203	2
Fort William, Ont.	13,241	1	16,431	—	1	16,596	—
Galt, Ont.	9,303	1	13,136	—	1	13,723	—
Granby, Que.	8,622	—	—	1	—	—	1
Guelph, Ont.	13,876	1	15,979	—	1	17,247	—
Halifax, N.S.	21,617	2	115,068	2	2	116,928	2
Hamilton, Ont.	84,540	1	118,487	1	1	125,441	2
Kingston, Ont.	16,419	1	25,662	1 ¹	1	28,164	1 ¹
Kitchener, Ont.	26,192	1	45,413	—	1	51,110	—
Lethbridge, Alta.	10,644	1	19,027	—	1	20,071	—
London, Ont.	56,368	2	122,387	—	2	123,382	—
Moncton, N.B.	11,605	2	30,132	—	2	32,096	—
Montreal, Que.	368,669	2	326,382	2 ²	2	327,246	2 ²
Moose Jaw, Sask.	10,087	1	9,100	—	1	9,349	—
New Westminster, B.C.	12,281	1	23,876	1	1	26,413	1
Niagara Falls, Ont.	15,725	1	17,091	—	1	17,930	—
Oakville, Ont.	13,452	1	7,200	1	1	7,878	1
Oshawa, Ont.	21,751	1	21,756	—	1	22,484	—
Ottawa, Ont.	81,703	2	147,804	2	2	157,683	1
Peterborough, Ont.	15,456	1	25,769	1	1	27,222	1
Port Arthur, Ont.	12,810	1	14,781	—	1	15,166	—
Quebec, Que.	44,589	1	4,958	—	1	4,858	—
Regina, Sask.	37,314	1	64,008	—	1	66,585	—
St. Catharines, Ont.	27,203	1	32,008	—	1	34,401	—
St. James, Man.	9,918	—	—	1	—	—	—
St. John's, Nfld.	16,563	2	23,850	1 ¹	2	26,166	1 ¹
Saint John, N.B.	14,075	2	50,759	1	2	52,322	1
Sarnia, Ont.	15,058	1	17,430	1	1	17,998	1
Saskatoon, Sask.	33,224	1	45,641	—	1	51,480	—
Sault Ste. Marie, Ont.	18,626	1	19,428	—	1	20,893	—
Shawinigan, Que.	7,320	—	—	1	—	—	1
Sherbrooke, Que.	19,101	1	8,959	—	1	8,889	—
Sudbury, Ont.	21,486	1	31,077	1	1	33,640	—
Sydney, N.S.	7,615	1	27,569	1	1	27,582	1
Toronto, Ont.	178,525	4	808,484	11 ³	4	845,412	10 ³
Trois-Rivières, Que.	14,123	—	—	1	—	—	1
Vancouver, B.C.	138,449	2	346,889	4	2	355,289	4
Victoria, B.C.	20,795	2	65,259	2	2	69,153	2
Welland, Ont.	10,625	1	18,473	—	1	18,937	—
Windsor, Ont.	53,687	1	81,836	—	1	87,003	1
Winnipeg, Man.	77,930	2	194,730	2	2	207,310	2
FRENCH-LANGUAGE NEWSPAPERS							
Chicoutimi, Que.	6,377	—	—	2	—	—	3
Cornwall, Ont.	11,783	—	—	1	—	—	1
Edmonton, Alta.	105,016	—	—	1	—	—	1
Granby, Que.	8,622	1	11,001	1	1	10,506	1
Hull, Que.	14,654	—	—	2 ²	—	—	2 ²
Jacques-Cartier, Que.	11,574	—	—	1 ⁴	—	—	1
Lachine, Que.	11,775	—	—	—	—	—	1 ⁴
LaSalle, Que.	13,232	—	—	—	—	—	1 ⁴
Laval, Que.	44,831	—	—	2 ⁴	—	—	2 ⁴

For footnotes, see end of table, p. 906.

13.—Estimated Numbers and Circulations of Reporting English-Language and French-Language Newspapers Published in Urban Centres of Over 30,000 Population, 1966 and 1968—concluded.

Urban Centre	Households (Census 1966)	1966			1968		
		Daily		Weekly	Daily		Weekly
	No.	No.	Circulation	No.	No.	Circulation	No.
FRENCH-LANGUAGE NEWSPAPERS—concluded							
London, Ont.....	56,368	—	—	1 ⁴	—	—	—
Moncton, N.B.....	11,605	1	10,216	—	1	7,776	—
Montreal, Que.....	368,669	5	415,847	19 ⁸	5	430,448	277
Ottawa, Ont.....	81,703	1	38,048	—	1	39,080	—
Quebec, Que.....	44,589	2	185,750	3 ²	2	193,337	4 ⁸
St. Boniface, Man.....	11,205	—	—	1	—	—	1
Ste. Foy, Que.....	11,021	—	—	1	—	—	1
St. Laurent, Que.....	15,865	—	—	—	—	—	1 ⁴
St. Michel, Que.....	17,724	—	—	—	—	—	1 ⁴
Shawinigan, Que.....	7,320	—	—	3	—	—	3
Sherbrooke, Que.....	19,101	1	34,804	1	1	37,477	3
Sudbury, Ont.....	21,486	—	—	2	—	—	1
Trois-Rivières, Que.....	14,123	1	44,401	2	1	44,710	2
Verdun, Que.....	22,405	—	—	—	—	—	1 ⁴

¹ Weekend newspaper.² Includes one weekend newspaper.³ Includes three weekend newspapers.⁴ Bilingual.⁵ Includes one bilingual.⁶ Includes five bilingual and 14 weekend newspapers.⁷ Includes 13 bilingual and 14 weekend newspapers.⁸ Includes two weekend newspapers.

14.—Estimated Numbers of Foreign-Language Publications, 1966 and 1968

Language	1966	1968	Language	1966	1968
No.	No.	No.	No.	No.	No.
Arabic.....	—	1	Latvian.....	1	1
Byelorussian.....	1	1	Lithuanian.....	3	3
Chinese.....	4	4	Maltese.....	—	1
Croat.....	3	3	Norwegian.....	1	1
Czech.....	2	2	Polish.....	3	3
Danish.....	1	1	Portuguese.....	4	6
Dutch.....	9	8	Serbian.....	3	3
Estonian.....	2	2	Slovak.....	2	2
Finnish.....	2	2	Slovenian.....	1	1
German.....	10	10	Swedish.....	3	3
Greek.....	7	8	Ukrainian.....	18	20
Hungarian.....	8	7	Yiddish.....	4	4
Icelandic.....	1	1			
Italian.....	15	9			
Japanese.....	2	2			
			Totals.....	110	109

15.—Estimated Numbers of Magazines and Related Publications, by Broad Classifications, 1966 and 1968

Classification	1966*	1968	Classification	1966*	1968
No.	No.	No.	No.	No.	No.
Agricultural and rural.....	58	61	Professions (engineering, architecture, law, accountancy, photography, etc.).....	27	30
Construction.....	24	21	Religious.....	33	32
Educational.....	111	119	Services and directories.....	94	99
Finance and insurance.....	16	17	Sports and entertainment.....	87	89
Government and government services.....	27	26	Trade, industry and related publications.....	205	209
Home, social and welfare.....	45	50	Transportation and travel.....	45	47
Labour.....	14	15	Miscellaneous.....	25	21
Pharmaceutical, medical, dental and nursing.....	62	59			
			Totals.....	873	895

Revenue from Printing and Publishing.—One of the industrial groups for which information is collected by the DBS in its annual Census of Manufactures is the printing, publishing and allied industries group which includes establishments engaged primarily in the publishing and printing of newspapers, magazines, periodicals, books, almanacs, maps, guides and the like, as well as establishments printing such publications for publishers, publishing firms that do no printing, and engraving, stereotyping and allied industries. Of interest in connection with press statistics is the amount of revenue received by these industries from advertising and from subscriptions or sales, which is given for the years 1965 and 1966 in Table 16. Additional data on manufacturing activity of this industrial group are included in Chapter XVI on Manufactures.

16.—Revenue from Advertising and from Subscriptions or Sales of Newspapers, Periodicals and Books, 1965 and 1966

Classes	1965			1966		
	Net Revenue ¹ from—			Net Revenue ¹ from—		
	Adver- tising	Subscrip- tions and Sales	Total	Adver- tising	Subscrip- tions and Sales	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newspapers and Periodicals—						
Newspapers, daily.....	220,822	79,652	300,474	234,915	84,782	319,697
Retail.....	113,294	...	...	121,906	...	...
Classified.....	49,135	...	...	53,248	...	...
National.....	58,393	...	...	59,761	...	...
Newspapers, national weekend.....	17,394	10,495	27,889	17,391	10,379	27,770
Local.....	2,365	...	...	1,259	...	...
National.....	15,029	...	...	16,131	...	...
Newspapers, weekly, semi-weekly, tri-weekly, etc.....	29,466	6,986	36,452	33,093	10,277	43,369
Local.....	23,323	...	...	25,569	...	...
National.....	6,143	...	...	7,524	...	...
Controlled distribution weekly newspapers....	1,495	221	1,715	2,067	179	2,246
Local.....	1,195	...	...	1,519	...	...
National.....	299	...	...	548	...	...
Magazines of general circulation.....	19,651	8,965	28,615	21,872	9,377	31,249
Telephone and city directories ²	34,790	1,533	36,323	37,155	2,341	39,496
Trade, technical, professional and financial publications.....	29,931	6,552	36,483	29,183	6,937	36,121
Agricultural publications.....	4,230	709	4,939	5,479	1,030	6,509
Religious publications.....	583	3,243	3,826	434	4,419	4,853
School and collegiate publications.....	176	954	1,131	190	1,109	1,299
Fraternal publications.....	372	413	785	367	346	713
Juvenile publications.....	31	139	170	—	130	130
All other periodicals.....	1,840	2,915	4,756	2,587	2,952	5,540
Totals, Newspapers and Periodicals.....	360,781	122,777	483,558	384,733	134,258	518,991
Books—						
Books published and printed.....	...	12,343	12,343	...	17,599	17,599
Books published only.....	...	22,501	22,501	...	26,579	26,579
Totals, Books.....	...	34,844	34,844	...	44,178	44,178

¹ Net revenue from advertising excludes commissions paid to recognized advertising agencies and all cash discounts; net revenue from subscriptions and sales excludes commissions paid to indirectly employed sales agents who are not regular employees.

² Includes telephone directories published by telephone companies.



The trend in the value of goods sold in the retail market is an accurate barometer of the well-being of the nation. Most goods pass from producer to wholesaler to retailer and reach the consumer through one of many types of outlets, from the large indoor shopping centre with its variety of stores carrying a complete range of goods to the small independent corner store. On the other hand, the farmers' market, where goods pass direct from producer to consumer, is still an attraction in many cities and towns.

CHAPTER XXI.—DOMESTIC TRADE AND PRICES

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad in terms of scope and complex in terms of activity. It encompasses all values added to commodities by agencies and services connected with the storage, distribution and sale of goods within each province as well as between provinces. Domestic trade is engaged in or facilitated by manufacturers, wholesale and retail establishments, mail-order houses, service trades, warehouse operators and other distributors, and by such "outside" agencies as banks, insurance companies, railways, advertising agencies and market research houses.

In recent years, a considerable degree of interest and speculation has been focused on the service trades, which embrace a wide spectrum of activities engaged in by professional, business and personal service establishments. Included also are the amusement and recreation services, such as regular and drive-in movie theatres, health clubs, golf courses, race tracks and other sports activities. Services provided by doctors, lawyers, hospitals and educational institutions do not fall within the scope of the Census of Merchandising and Service Establishments.

Only certain phases of this broad field of domestic trade are covered in this Chapter but, wherever possible, references are given to related material appearing elsewhere in this publication. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various perspectives. The Index will be found useful in this respect.

Section 1.—Merchandising and Service Establishments*

Surveys of merchandising and service establishments centre on a census of such business establishments. The first census was taken in 1931 and similar censuses in 1941, 1951 and 1961, the latter providing a broader range of data than the previous censuses. The reports for 1961 were published in two series (locations and establishments) and contained information on sales, inventory and credit; gross margins and operating expenses; small geographic area data; and, for establishments only, an analysis of sales by commodities. That census, however, marked the end of the "decennial" program. Commencing with 1966, the censuses of merchandising and service establishments became part of a quinquennial series undertaken by DBS to provide more frequent survey benchmarks. Summary results of the 1966 Census, covering retail and service trades, are given in Subsection 1.

Each census forms a new base for the various intercensal (monthly, quarterly and annual) surveys of retail, wholesale and service trades; some are sample surveys and others are on a full-coverage basis. Subsection 2 contains current intercensal information on the distributive trades, most of which is on a 1961 base; conversion to the 1966 benchmark is under way and the revised data on that base will be available for the 1970 Year Book. In the meantime, these data may be secured, as they are compiled, from the Merchandising and Services Division of DBS.

Subsection 1.—1966 Census of Merchandising and Services

Retail Trade†

The results of the 1966 retail trade census, particularly in the smaller geographic areas reflect the changes that took place between 1961 and 1966 in the structure of retailing. The advent of new shopping areas, whether in the form of planned multiple centres or as single discount department or other large stores, had a significant effect on retail trade, as did urban redevelopment and the construction of new retail outlets outside corporate boundaries of cities and towns.‡

Although no classification change was made since 1961 to shift any area into or out of retail trade, some changes in definition were made within the retail universe. In such cases, direct comparisons with 1961 data are not feasible. Details of these changes are as follows:—

1. The 1961 classification "confectionery stores" was largely replaced by "groceries, confectionery and sundries" stores, in which no one major commodity grouping can exceed 60 p.c. The new category embraces an unknown number of stores formerly classified as "grocery stores, without fresh meat". In the aggregate, however, the food group is comparable to the 1961 results.
2. A major change in definition occurred in the department store category, details of which may be found in the monthly publication *Department Store Sales and Stocks* (Catalogue No. 63-002). Briefly, the data now reflect a "pure" department store concept. Catalogue and mail-order offices, together with other "general" type stores, are now included in the classification "general merchandise stores". Specialty clothing and appliances stores, owned and operated by department store firms, are now included in their appropriate trade categories. In contrast, a number of stores were brought into the universe—in particular, department store locations operated by other retail establishments (including food and variety chains). An important change in treatment was accorded the sales of concessions located in department store outlets. These are now included as part of the total business of the outlet, with the exception of associated food departments which are not an integral part of the operation or which are identified to the public by any name other than that of the department store with which they are associated. Formerly, concessions were tabulated and counted as separate "stores" in their own kind of business, either in retail or service trades. Direct comparison with related trade results in 1961 is therefore difficult, if not impossible.
3. A new census classification introduced in 1966 was "home and auto supply stores". These stores can be added to the now lesser classification "accessories, tire and battery shops" in order to achieve comparability with 1961.

* Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.

† 1966 Census of Canada, Vol. VI (Retail Trade), (Catalogue Nos. 97-601 to 97-608), published at intervals during 1968-69.

‡ For purposes of analysis and research, the reader is referred to the *Market Research Handbook*, 1969 ed. (Catalogue No. 63-514), published by the Merchandising and Services Division of DBS. This volume contains detailed information, particularly for small geographic areas, on population, housing, income, agriculture, manufacturing and the retail and service trades.

In addition to definitional changes, the 1966 Census incorporated a significant improvement in classification of returns. This was a "streamlined" census, with a consequent reduction in the number of questions asked. As a result, it was possible to include a complete list of kinds of business which respondents were asked to check off rather than being required to write in their trade designation (as in 1961). For example, returns classed as "garages" in 1961, based on the respondents' write-in of "auto repairs", were properly checked off and classified as "paint and body shops" in 1966.

Table 1 gives retail trade figures by province and incorporated urban centres of 10,000 population or over; Table 2 gives summary statistics of retail trade by kind of business; and Table 3 shows the growth in retail trade from 1961 to 1966, stratified by current "kind of business" groups, and provides a comparison of 1966 data on both the new and the 1961 Census bases.

1.—Retail Trade by Province and Incorporated Urban Centres of 10,000 Population or Over, 1966 Census

Province and Incorporated Urban Centre	Stores	Sales	Total Payroll for Year
	No.	\$'000	\$'000
Newfoundland.....	4,779	405,607.4	34,067.7
Corner Brook.....	207	41,956.8	4,227.0
St. John's.....	579	129,708.8	14,396.9
Prince Edward Island.....	906	107,641.5	8,420.6
Charlottetown.....	200	37,425.7	3,523.2
Summerside.....	97	22,851.5	2,057.2
Nova Scotia.....	6,388	752,988.9	66,536.9
Amherst.....	116	20,131.9	1,683.0
Dartmouth.....	271	62,589.9	6,051.1
Glace Bay.....	189	20,510.8	1,678.1
Halifax.....	664	170,887.7	19,966.8
New Glasgow.....	149	25,794.3	2,383.1
Sydney.....	287	50,624.0	4,942.5
Truro.....	159	31,234.7	3,227.5
New Brunswick.....	5,123	594,806.3	52,409.0
Bathurst.....	140	28,265.0	2,391.3
Campbellton.....	111	16,790.4	1,646.1
Edmundston.....	130	21,610.3	2,132.1
Fredericton.....	202	62,259.9	6,496.7
Lancaster.....	87	17,336.0	1,830.9
Moncton.....	335	72,516.6	8,289.9
Oromocto.....	20	6,080.9	501.6
Saint John.....	441	88,875.7	9,749.2
Quebec.....	46,980	5,882,110.8	522,560.4
Alma.....	180	34,434.2	2,172.2
Anjou.....	63	9,415.7	710.9
Arvida.....	67	11,170.1	1,033.8
Asbestos.....	115	13,583.7	891.1
Baie Comeau.....	58	17,833.3	1,673.4
Beaconsfield.....	34	8,509.9	693.4
Beaumont.....	52	5,153.0	473.3
Beloil.....	84	12,278.2	989.8
Boucherville.....	50	8,811.4	616.1
Brossard.....	38	10,027.1	901.9
Cap de la Madeleine.....	215	21,401.0	1,656.5
Chambly.....	67	7,446.5	552.1
Charlesbourg.....	99	13,803.9	1,164.9
Châteauguay.....	28	5,443.5	507.0
Châteauguay Centre.....	100	19,993.8	1,564.8
Chicoutimi.....	271	54,570.0	5,414.1
Chicoutimi N.....	52	4,764.9	329.1
Côte St. Luc.....	47	10,859.8	1,012.3
Cowansville.....	110	16,089.5	1,310.8
Dollard des Ormeaux.....	48	7,285.7	677.1
Dorval.....	120	40,824.6	4,189.9
Drummondville.....	343	45,764.1	3,628.3
Gatineau.....	95	12,600.6	1,049.2
Giffard.....	62	5,816.6	532.0
Granby.....	365	41,746.4	3,547.2

**1.—Retail Trade by Province and Incorporated Urban Centres of 10,000 Population or Over,
1966 Census—continued**

Province and Incorporated Urban Centre	Stores	Sales	Total Payroll for Year
	No.	\$'000	\$'000
Quebec—concluded			
Grand'Mère.....	169	17,375.0	1,299.2
Greenfield Park.....	66	35,101.1	3,374.7
Hauterive.....	70	16,674.1	1,486.8
Hull.....	422	66,566.4	5,924.0
Jacques-Cartier.....	324	38,696.6	3,306.2
Joliette.....	263	37,325.7	2,929.1
Jonquière.....	198	31,353.2	2,946.5
Kénogami.....	87	8,278.7	735.5
Lachine.....	268	52,582.4	4,548.2
Lachute.....	147	16,529.3	1,188.0
Laflèche.....	68	4,961.1	407.8
LaSalle.....	182	35,320.4	2,919.4
La Tuque.....	120	16,353.4	1,417.4
Laizon.....	87	6,755.3	514.0
Laval.....	1,009	166,180.3	13,282.3
Lévis.....	158	42,277.0	3,425.2
Longueuil.....	171	31,266.8	2,807.8
Magog.....	172	16,502.7	1,154.2
Matane.....	148	17,152.5	1,414.5
Montmagny.....	158	14,193.0	918.8
Montreal.....	10,068	1,734,537.3	184,905.1
Montreal N.....	405	49,085.6	4,661.8
Mount Royal.....	107	45,047.9	4,839.1
Noranda.....	56	8,561.1	664.0
Outremont.....	109	22,936.8	2,733.6
Pierrefonds.....	90	17,531.8	1,420.7
Pointe aux Trembles.....	120	19,883.8	1,725.9
Pointe Claire.....	159	59,335.8	6,864.5
Pointe Gatineau.....	61	4,187.3	289.0
Quebec.....	1,675	286,694.7	34,077.6
Repentigny.....	82	13,041.3	1,016.1
Rimouski.....	225	33,816.3	3,024.9
Rivière du Loup.....	161	19,303.6	1,540.3
Rouyn.....	197	32,728.4	2,960.4
St. Bruno de Montarville.....	49	6,409.6	495.0
Ste. Foy.....	225	70,301.4	7,189.4
St. Hubert.....	89	7,379.1	447.5
St. Hyacinthe.....	352	41,454.2	3,492.8
St. Jean.....	306	38,788.0	3,347.2
St. Jérôme.....	332	33,385.1	2,698.1
St. Lambert.....	85	17,414.7	1,809.9
St. Laurent.....	235	47,047.3	4,464.3
St. Léonard.....	94	47,404.4	4,271.5
St. Michel.....	401	45,661.3	3,848.0
Ste. Thérèse.....	128	17,601.0	1,331.8
Sept Îles.....	142	29,566.1	2,710.9
Shawinigan.....	336	35,794.8	3,018.3
Shawinigan S.....	75	8,979.0	721.6
Sherbrooke.....	648	98,179.8	9,473.4
Sillery.....	53	9,667.4	806.2
Sorel.....	247	24,592.7	1,912.6
Thetford Mines.....	237	24,856.6	2,110.5
Tracy.....	72	8,785.1	648.5
Trois-Rivières.....	527	71,870.0	6,942.3
Val d'Or.....	131	23,323.5	2,029.7
Valleyfield (Salaberry de).....	320	38,498.7	2,963.4
Verdun.....	522	80,645.4	7,567.5
Victoriaville.....	253	28,090.2	2,092.7
Westmount.....	166	33,293.6	3,618.4
Ontario			
Aurora.....	51,119	8,634,073.7	826,356.2
Barrie.....	64	10,413.3	863.2
Belleville.....	222	46,560.1	4,582.5
Brampton.....	282	53,025.3	5,648.9
Brantford.....	218	54,468.4	4,515.4
Brockville.....	449	84,302.1	8,116.6
Burlington.....	176	33,779.8	3,203.8
Chatham.....	297	71,341.3	6,346.7
Cobourg.....	315	61,572.1	6,268.1
Cornwall.....	113	22,716.6	1,695.1
Dundas.....	419	58,197.4	4,827.7
	101	17,554.6	1,540.6

**1.—Retail Trade by Province and Incorporated Urban Centres of 10,000 Population or Over,
1966 Census—continued**

Province and Incorporated Urban Centre	Stores	Sales	Total Payroll for Year
	No.	\$'000	\$'000
Ontario—concluded			
Eastview (now Vanier City).....	148	22,859.3	2,217.6
Forest Hill.....	137	15,219.7	1,689.1
Fort William.....	332	55,847.8	5,739.0
Galt.....	266	42,595.4	3,762.9
Georgetown.....	79	13,167.8	1,060.4
Guelph.....	390	69,667.0	6,629.8
Hamilton.....	2,190	433,780.5	44,931.1
Kapuskasing.....	86	18,959.2	1,530.6
Kenora.....	107	22,994.0	1,919.1
Kingston.....	454	99,239.9	10,443.9
Kirkland Lake.....	148	18,531.4	1,889.9
Kitchener.....	593	129,261.0	14,329.5
Leaside.....	162	32,461.8	3,303.6
Lindsay.....	131	23,471.5	2,146.5
London.....	1,221	269,268.5	30,293.3
Long Branch.....	90	14,073.3	1,046.0
Midland.....	105	18,035.8	1,677.0
Mimico.....	84	12,503.4	1,026.7
New Toronto.....	117	32,506.8	2,953.5
Niagara Falls.....	503	75,857.3	7,357.3
North Bay.....	232	41,184.3	4,287.7
Oakville.....	335	61,531.4	5,591.8
Orillia.....	172	31,404.0	2,942.4
Oshawa.....	477	107,064.2	11,650.4
Ottawa.....	1,684	433,870.6	49,280.7
Owen Sound.....	192	29,182.6	2,810.8
Pembroke.....	158	29,328.5	2,467.6
Peterborough.....	398	92,713.6	9,291.4
Port Arthur.....	310	74,447.3	7,532.6
Port Colborne.....	166	22,059.2	1,936.3
Preston.....	95	13,553.1	1,080.8
Richmond Hill.....	119	29,155.3	2,587.8
St. Catharines.....	773	153,038.5	15,749.5
St. Thomas.....	226	37,921.0	3,606.9
Sarnia.....	386	76,965.7	7,982.8
Sault Ste. Marie.....	481	95,391.5	10,083.5
Stratford.....	222	38,831.0	3,593.5
Sudbury.....	554	133,083.3	13,108.0
Timmins.....	248	37,875.2	3,514.3
Toronto.....	7,059	1,259,135.4	142,866.0
Trenton.....	140	24,557.6	2,153.9
Wallaceburg.....	123	17,839.6	1,493.1
Waterloo.....	157	39,203.1	3,816.8
Welland.....	341	56,105.9	4,644.5
Weston.....	135	54,187.1	4,439.8
Whitby.....	111	20,065.9	1,719.0
Windsor.....	1,301	253,958.8	27,826.5
Woodstock.....	199	37,530.8	3,194.1
Manitoba.....	6,497	1,006,479.8	98,818.0
Brandon.....	221	49,250.0	4,847.0
East Kildonan.....	89	16,618.0	1,463.2
Flin Flon.....	65	11,920.7	1,219.0
Portage la Prairie.....	117	21,966.6	1,807.3
St. Boniface.....	208	24,845.9	2,486.6
St. James.....	141	30,770.3	3,160.2
St. Vital.....	106	14,039.9	1,101.3
Transcona.....	77	11,460.7	1,033.4
West Kildonan.....	71	22,026.0	2,114.2
Winnipeg.....	1,872	463,508.4	56,533.4
Saskatchewan.....	7,464	1,046,646.8	87,535.5
Moose Jaw.....	261	56,087.8	5,969.7
North Battleford.....	114	27,839.8	2,587.5
Prince Albert.....	178	38,915.3	3,687.6
Regina.....	708	188,199.2	18,389.4
Saskatoon.....	684	165,401.4	17,819.8
Swift Current.....	124	32,112.3	3,220.7
Yorkton.....	115	27,458.3	2,690.7
Alberta.....	10,182	1,758,076.4	178,192.6
Calgary.....	1,899	461,444.2	53,371.6

1.—Retail Trade by Province and Incorporated Urban Centres of 10,000 Population or Over, 1966 Census—concluded

Province or Territory and Incorporated Urban Centre	Stores	Sales	Total Payroll for Year
	No.	\$'000	\$'000
Alberta—concluded			
Edmonton.....	2,072	538,112.1	62,884.5
Grande Prairie.....	93	22,277.6	2,154.0
Lethbridge.....	340	67,398.1	7,039.5
Medicine Hat.....	216	41,037.2	3,969.1
Red Deer.....	186	51,586.7	5,164.6
British Columbia.....	13,948	2,462,828.5	272,234.6
Dawson Creek.....	109	26,599.3	2,571.7
Kamloops.....	155	38,751.1	4,611.9
Kelowna.....	174	32,889.2	3,388.1
Nanaimo.....	194	40,992.5	4,338.3
New Westminster.....	355	106,354.8	11,958.6
North Kamloops.....	55	9,708.1	1,075.0
North Vancouver.....	194	33,138.3	3,191.0
Penticton.....	182	30,478.8	3,137.5
Port Alberni.....	126	24,461.7	2,853.2
Port Coquitlam.....	65	8,672.8	703.4
Prince George.....	211	66,697.0	7,470.5
Prince Rupert.....	92	23,780.2	2,252.3
Trail.....	109	29,701.3	2,832.3
Vancouver.....	3,432	713,366.1	96,768.1
Vernon.....	141	25,615.3	2,716.6
Victoria.....	731	170,198.8	21,854.5
Yukon Territory.....	104	23,185.8	2,643.8
Northwest Territories.....	130	29,623.0	1,801.8
Canada.....	153,620	22,695,068.9	2,151,577.1

2.—Summary Statistics of Retail Trade, by Kind of Business, 1966 Census

Kind of Business	Stores	Sales	Inventory at End of Year	Working Pro-prietors	Paid Employees	
					Last Week of November	Total Payroll for Year
	No.	\$'000	\$'000	No.	No.	\$'000
Food.....	46,220	5,905,358.2	332,893.3	42,208	138,636	379,793.3
Bakery products stores.....	3,148	110,398.6	1,517.0	2,390	6,254	13,381.8
Candy, nut and confectionery stores.....	959	26,934.3	1,606.5	612	1,677	2,710.4
Dairy products stores.....	953	43,487.5	2,079.2	738	1,814	4,622.9
Egg and poultry stores.....	83	7,484.2	143.3	89	154	408.9
Fruit and vegetable stores.....	681	46,659.0	1,948.5	734	1,042	2,540.0
Groceries, confectionery and sundries stores.....	10,709	329,582.2	30,017.1	10,765	5,931	10,230.0
Grocery stores, without fresh meat.....	13,468	583,403.2	53,507.4	13,597	9,373	18,728.7
Grocery stores, with fresh meat.....	12,748	4,438,628.7	233,091.1	9,897	104,678	303,441.3
Meat markets.....	2,622	271,269.4	5,864.6	2,579	6,188	20,114.4
Fish markets.....	187	8,047.0	309.6	186	181	467.4
Delicatessen stores.....	474	31,438.2	1,737.2	456	1,055	2,598.2
Other food stores.....	188	8,025.9	981.8	165	289	649.3
General Merchandise.....	9,231	3,626,300.4	565,886.5	5,898	184,409	453,491.9
Department stores.....	270	1,973,726.6	302,933.7	—	119,586	304,949.9
General merchandise stores.....	1,875	600,487.2	80,019.4	859	16,741	43,401.7
General stores, more than one third food.....	5,392	557,884.2	103,856.3	4,436	13,367	36,803.9
Variety stores.....	1,694	494,202.4	79,077.1	603	34,715	68,336.4
Automotive.....	36,262	6,943,448.1	748,458.6	31,438	155,350	661,959.4
Motor vehicle dealers.....	3,935	4,337,821.7	565,438.3	1,457	76,842	378,473.7
Used car dealers.....	1,366	194,992.4	21,636.8	1,029	2,847	13,156.1

2.—Summary Statistics of Retail Trade, by Kind of Business, 1966 Census—continued

Kind of Business	Stores	Sales	Inventory at End of Year	Working Pro- prietors	Paid Employees	
					Last Week of November	Total Payroll for Year
	No.	\$'000	\$'000	No.	No.	\$'000
Automotive—concluded						
Accessories, tire and battery shops.....	1,362	175,085.2	30,592.9	814	5,186	22,928.1
Home and auto supply stores....	526	148,902.1	27,729.8	280	5,105	18,855.5
Service stations.....	18,720	1,671,426.8	75,054.0	17,966	43,166	140,946.4
Garages.....	5,570	202,117.2	17,044.1	5,601	7,855	29,357.5
Paint and body shops.....	2,858	120,689.9	4,044.9	2,703	7,393	33,754.9
Other specialty repair shops.....	1,310	62,120.0	5,868.8	1,077	3,307	15,066.7
Car wash.....	452	23,146.3	357.1	339	3,227	7,985.1
Other automotive businesses....	193	7,146.5	691.9	172	422	1,435.4
Apparel and Accessories.....	19,816	1,634,066.1	428,642.0	13,068	67,207	198,811.8
Men's and boys' clothing stores.	2,817	285,951.4	87,196.4	1,727	8,607	34,621.9
Men's and boys' furnishings stores	439	32,181.1	9,549.5	309	845	2,962.7
Women's and misses' ready-to-wear stores.....	4,180	386,946.2	79,061.4	2,464	17,440	47,386.7
Lingerie and hosiery stores.....	743	26,512.7	7,923.4	602	1,139	2,581.4
Millinery stores.....	559	10,023.1	1,598.4	510	527	1,238.4
Fur stores.....	698	55,269.1	10,003.6	451	2,579	9,071.9
Women's apparel and accessories stores.....	126	5,423.8	1,333.9	98	256	650.7
Children's and infants' wear stores.....	1,097	53,743.7	16,155.9	923	2,280	4,711.6
Family clothing and furnishings stores.....	2,690	398,000.6	95,994.1	1,703	18,755	49,018.6
Men's shoe stores.....	112	5,478.7	1,934.7	94	143	621.9
Women's shoe stores.....	267	36,526.4	8,214.3	101	841	4,520.4
Children's and infants' shoe stores.....	73	4,178.5	1,235.8	39	161	542.0
Family shoe stores.....	2,870	214,437.7	69,717.3	1,333	8,579	26,221.8
Custom tailors.....	1,014	39,230.2	7,042.7	934	1,792	6,547.2
Second-hand clothing stores.....	398	8,681.9	1,036.1	258	635	1,089.9
Piece goods stores.....	1,610	64,036.0	19,719.5	1,437	2,390	5,952.0
Other apparel and accessories stores.....	123	7,445.0	1,925.0	85	338	1,072.7
Hardware and Home Furnish- ings.....	15,921	1,480,774.2	322,742.1	11,729	43,829	174,116.4
Hardware stores.....	3,786	357,408.8	102,226.3	2,887	11,108	37,848.2
Paint, glass and wallpaper stores	807	47,638.9	8,675.7	550	1,446	6,004.1
Furniture stores.....	2,208	370,883.5	74,068.7	1,168	9,245	40,659.5
Household appliance stores.....	1,145	116,487.5	22,013.6	693	4,027	16,848.2
Television sales and service shops	711	30,733.0	6,463.2	667	1,012	3,733.1
Furniture, television, radio and appliance stores.....	1,154	252,464.2	51,886.9	525	6,161	26,252.0
Television, radio and hi-fi stores	737	65,842.7	13,692.8	547	1,714	7,672.7
Television and radio repair shops	2,154	41,953.9	7,024.0	2,061	1,733	6,700.0
Household appliance repair shops	714	21,465.1	3,460.0	633	1,298	5,127.8
Electrical supply stores.....	205	11,534.5	2,606.9	152	434	1,495.3
China, glassware and kitchen-ware stores.....	116	6,479.6	2,144.5	96	305	877.4
Floor coverings, curtains and drapery stores.....	952	125,684.2	19,433.2	577	4,252	17,461.1
Picture and picture framing stores.....	97	2,581.1	525.2	91	146	437.1
Antique stores.....	521	12,783.5	5,300.0	505	369	1,314.9
Second-hand furniture stores.....	513	10,463.6	1,772.7	500	340	886.3
Other home furnishings stores....	101	6,370.1	1,448.4	77	239	798.7
Other Retail Stores.....	26,170	3,105,121.9	420,655.1	18,115	79,534	283,404.3
Drug stores without meals or lunches.....	4,745	615,023.6	117,432.4	2,754	24,342	85,493.5
Drug stores with meals or lunches.....	160	33,199.1	5,758.8	66	1,582	5,076.6
Patent and proprietary medicine stores.....	251	21,387.5	3,593.7	185	643	1,573.5
Fuel oil dealers.....	1,664	391,564.4	12,083.6	1,204	7,112	32,247.2
Fuel dealers, other than oil.....	533	83,651.2	7,930.1	217	2,256	10,224.5
Government liquor stores.....	1,112	765,254.1	49,021.2	2	6,472	29,973.5

2.—Summary Statistics of Retail Trade, by Kind of Business, 1966 Census—concluded

Kind of Business	Stores	Sales	Inventory at End of Year	Working Pro- prietors	Paid Employees	
					Last Week of November	Total Payroll for Year
	No.	\$'000	\$'000	No.	No.	\$'000
Other Retail Stores—concluded						
Brewers' retail stores or agents..	364	160,179.9	56.2	25	1,210	6,744.3
Wine stores.....	51	5,577.9	253.4	—	214	882.7
Jewellery stores.....	2,809	191,635.2	64,935.5	2,152	7,992	25,273.4
Jewellery repair shops.....	609	6,834.6	1,503.3	611	218	674.4
Sporting goods stores.....	1,132	86,082.4	23,973.7	863	2,326	8,397.6
Boats, motors and accessories dealers.....	440	46,250.5	8,940.6	305	997	4,367.3
Bicycle shops, incl. repairs.....	419	9,149.0	2,450.2	415	239	676.4
Motorcycle dealers.....	179	21,082.7	4,344.9	137	462	1,883.5
Tobacco stores and stands.....	2,145	124,465.9	11,731.9	1,775	3,239	6,881.6
Book and stationery stores.....	1,080	81,623.1	20,219.1	732	3,448	9,347.5
Newsdealers.....	204	10,350.9	1,074.0	149	333	713.7
Florists.....	1,673	72,225.0	4,043.7	1,454	4,038	11,977.8
Gift, novelty and souvenir stores	1,691	63,169.4	16,195.3	1,467	2,600	5,847.9
Camera stores.....	331	35,772.6	7,470.3	199	1,060	4,089.0
Piano and organ stores.....	128	16,420.0	3,967.9	69	490	2,234.9
Music stores.....	427	28,425.8	7,602.2	336	1,016	2,995.3
Opticians.....	379	19,109.0	1,807.2	134	877	4,712.4
Luggage and leather goods stores	177	11,866.5	3,279.8	108	503	1,370.6
Health appliance stores.....	170	7,039.5	640.2	118	287	1,347.8
Monument dealers.....	204	9,591.7	1,646.9	165	399	1,825.7
Toy and hobby shops.....	319	15,734.9	3,795.1	232	770	1,638.2
Record bars.....	210	13,480.0	3,259.6	148	453	1,158.0
Pet stores.....	212	4,822.1	935.0	210	174	363.9
Religious goods stores.....	58	2,749.8	1,078.0	38	165	408.4
Wool stores.....	250	5,022.8	1,861.0	236	258	478.7
Other retail stores.....	2,044	146,380.8	27,770.3	1,609	3,359	12,524.5
Totals, All Stores.....	153,620	22,695,068.9	2,819,187.6	122,456	668,965	2,151,577.1

3.—Value of Retail Trade and Percentage Change, by Kind of Business Group, 1961 and 1966 Censuses

Kind of Business Group	1961 Census	1966 Census (1961 base)	Percentage Change 1961-66	1966 Census (1966 base)	Percentage Change 1961-66
	\$'000	\$'000		\$'000	
Grocery and combination stores.....	3,703,787	5,207,546	+40.6	5,351,614 ¹	+44.5
All other food stores.....	594,453	698,296	+17.5	553,744	- 6.8
Department stores.....	1,550,618	2,143,614	..	1,973,727 ²	..
General stores.....	607,368	..	..	..	..
Variety stores.....	373,879	..	..	..	..
Motor vehicle dealers.....	2,598,816	..	..	..	..
Service stations and garages.....	1,492,121	1,873,759	+25.6	1,873,544	+25.6
Men's clothing stores.....	246,904	379,865	..	357,363	+44.7
Women's clothing stores.....	315,017	421,494	..	418,883	..
Family clothing stores.....	250,942	..	..	..	..
Shoe stores.....	195,179	277,535	..	260,621	..
Hardware stores.....	299,619	..	..	..	..
Furniture, TV, radio and appliances	572,451	..	..	739,836	..
Fuel dealers.....	346,691	475,216	..	475,216	..
Drug stores.....	467,281	..	..	..	..
Jewellery stores.....	144,922	..	..	..	..
All other stores.....	2,312,902	3,416,558	+47.7	3,705,345	+60.2
Totals, All Stores.....	16,072,950	..	..	22,695,069	..

¹ Includes groceries, confectionery and sundries stores.² Includes "service trade" concessions (restaurants, beauty parlours, etc.) operating in department store locations.

Service Trades*

Changes within the service sector of the economy can best be measured and analysed by comparing the results obtained in each census of merchandising and services since, at present, intercensal surveys provide only partial coverage of this large and diversified field.

Consumer expenditures on services—at least, those considered within the scope of the census—have increased rapidly in recent years. Examination of the 1961-66 rates of change within the following key economic areas shows that the service trades have developed at a faster rate than most other important measurements.

<u>Indicator</u>	<u>Rate of Change 1961-66</u>
	p.c.
Gross national product.....	+ 55.1
Service trades.....	+ 53.9
Personal income.....	+ 51.0
Personal disposable income.....	+ 48.3
Personal consumer expenditure.....	+ 42.4
Retail trade.....	+ 41.1
Per capita personal income.....	+ 37.6

At the present rate of growth, the receipts of service trades covered by the census will have more than doubled their 1961 levels by the end of the present decade.

In the census, service trades are divided into six main categories, each of which is further stratified by kind of business. These main categories—and the most important classifications within each—are as follows:—

Amusement and Recreation Group—theatres (regular, movie and drive-in); bowling alleys and billiard parlours; health clubs; golf courses; and race tracks.

Business Services Group—advertising agencies; sign-painting shops; chartered and certified accountants; addressing, duplicating, typing and mailing services; credit agencies; and employment agencies.

Personal Services Group—barber shops; beauty salons; laundries; dry cleaners and dyers; shoe repair shops; valet service, pressing and repair shops; and dressmakers.

Repair Services Group—welding shops; locksmiths; gunsmiths; and tool and cutlery repair shops.

Hotel, Tourist Camp and Restaurant Group—hotels (full-year and seasonal); motels; tourist courts, cabins, etc.; hunting and fishing camps; eating places; refreshment booths and stands; fish-and-chip shops; cocktail lounges, bars and nightclubs; taverns, beverage rooms and public houses; caterers; and industrial restaurants.

Miscellaneous Services Group—funeral directors; photographers (commercial and portrait); developing, printing and enlarging services; automobile and truck rentals; collection agencies; driving schools; window cleaning; and building maintenance services.

It should be noted that in Table 4, which shows service trades by province and by kind of business group for 1961 and 1966, the 1966 totals are slightly understated, to the extent that service trade concessions operating in department store locations, such as beauty parlours, restaurants and shoe repairs, are considered as department store sales and are therefore included in retail trade.

* 1966 Census of Canada, Vol. VIII (Services), (Catalogue Nos. 97-641 to 97-647), published at intervals during 1969.

4.—Service Trades, by Province and by Kind of Business Group, 1961 and 1966 Censuses

Province and Kind of Business Group	Locations			Receipts		
	1961	1966	Percentage Change 1961-66	1961	1966	Percentage Change 1961-66
	No.	No.		\$'000	\$'000	
Newfoundland	834	1,167	+ 39.9	31,116.4	47,155.0	+ 51.5
Amusement services.....	87	137	+ 57.5	1,360.4	3,997.5	+ 193.8
Business services.....	24	49	+ 104.2	960.1	2,178.0	+ 128.9
Personal services.....	244	323	+ 32.4	2,870.7	4,323.6	+ 50.6
Repair services.....	18	10	- 44.4	440.8	72.4	- 83.6
Hotels and restaurants.....	427	601	+ 40.7	16,580.0	32,383.1	+ 95.3
Miscellaneous services.....	34	47	+ 38.2	8,904.4	4,200.4	- 52.8
Prince Edward Island	360	362	+ 0.6	6,442.3	9,554.7	+ 48.3
Amusement services.....	21	32	+ 52.4	618.9	1,284.4	+ 107.5
Business services.....	7	8	+ 14.3	230.3	275.7	+ 19.7
Personal services.....	129	127	- 1.6	1,143.8	1,448.6	+ 26.6
Repair services.....	25	20	- 20.0	151.8	319.8	+ 110.7
Hotels and restaurants.....	149	150	+ 0.7	3,887.7	5,659.8	+ 45.6
Miscellaneous services.....	29	25	- 13.8	409.8	566.4	+ 38.2
Nova Scotia	2,538	2,678	+ 5.5	64,109.0	92,186.5	+ 43.8
Amusement services.....	140	219	+ 56.4	5,537.0	9,260.5	+ 67.2
Business services.....	88	116	+ 31.8	3,018.0	6,563.2	+ 117.5
Personal services.....	1,039	1,129	+ 8.7	10,013.8	13,704.5	+ 36.9
Repair services.....	111	74	- 33.3	2,163.4	1,480.1	- 31.6
Hotels and restaurants.....	997	958	- 3.9	35,761.7	49,915.9	+ 39.6
Miscellaneous services.....	163	182	+ 11.7	7,615.1	11,262.3	+ 47.9
New Brunswick	2,066	2,236	+ 8.2	42,465.9	77,433.6	+ 82.3
Amusement services.....	133	190	+ 42.9	5,547.0	7,716.8	+ 39.1
Business services.....	56	89	+ 58.9	2,420.2	4,574.4	+ 89.0
Personal services.....	892	934	+ 4.7	7,299.1	10,063.7	+ 37.9
Repair services.....	91	71	- 22.0	844.1	1,243.9	+ 47.4
Hotels and restaurants.....	777	822	+ 5.8	21,661.2	40,746.9	+ 88.1
Miscellaneous services.....	117	130	+ 11.1	4,694.3	13,087.9	+ 178.8
Quebec	23,803	27,232	+ 14.4	821,379.3	1,252,882.1	+ 52.5
Amusement services.....	1,323	1,707	+ 29.0	63,240.2	107,697.6	+ 70.3
Business services.....	766	994	+ 29.8	71,008.6	119,760.1	+ 68.7
Personal services.....	8,991	10,172	+ 13.1	109,869.8	162,050.7	+ 47.5
Repair services.....	804	689	- 14.3	14,264.2	17,139.0	+ 20.2
Hotels and restaurants.....	10,623	12,202	+ 14.9	479,415.2	687,737.7	+ 43.5
Miscellaneous services.....	1,296	1,468	+ 13.3	83,581.3	158,497.0	+ 89.6
Ontario	32,014	34,518	+ 7.8	1,175,641.8	1,839,281.4	+ 56.4
Amusement services.....	1,922	2,628	+ 36.7	113,898.8	210,427.9	+ 84.7
Business services.....	1,778	2,236	+ 25.8	132,930.8	254,120.5	+ 91.2
Personal services.....	13,213	14,119	+ 6.9	171,069.6	250,963.0	+ 46.7
Repair services.....	1,134	948	- 16.4	25,145.0	24,911.3	- 0.9
Hotels and restaurants.....	12,198	12,565	+ 3.0	601,484.6	840,454.2	+ 39.7
Miscellaneous services.....	1,769	2,022	+ 14.3	131,113.0	258,404.5	+ 97.1
Manitoba	3,853	4,058	+ 5.3	153,921.0	216,718.3	+ 40.8
Amusement services.....	401	433	+ 8.0	12,817.1	17,178.3	+ 34.0
Business services.....	189	215	+ 13.8	11,014.9	20,145.8	+ 82.9
Personal services.....	1,333	1,489	+ 11.7	20,243.5	25,305.0	+ 25.0
Repair services.....	247	173	- 30.0	3,169.2	2,133.5	- 32.7
Hotels and restaurants.....	1,481	1,541	+ 4.1	92,825.8	122,239.9	+ 31.7
Miscellaneous services.....	202	207	+ 2.5	13,850.5	29,717.8	+ 114.6
Saskatchewan	4,263	4,366	+ 2.4	123,925.0	165,003.1	+ 33.1
Amusement services.....	630	563	- 10.6	8,087.7	10,675.7	+ 32.0
Business services.....	143	165	+ 15.4	5,155.2	8,402.7	+ 63.0
Personal services.....	1,310	1,445	+ 10.3	13,142.0	18,251.1	+ 38.9
Repair services.....	318	245	- 23.0	3,599.7	4,206.6	+ 16.9
Hotels and restaurants.....	1,658	1,719	+ 3.7	85,651.7	111,674.3	+ 30.4
Miscellaneous services.....	204	229	+ 12.3	8,288.7	11,792.7	+ 42.3

**4. —Service Trades, by Province and by Kind of Business Group,
1961 and 1966 Censuses—concluded**

Province or Territory and Kind of Business Group	Locations			Receipts		
	1961	1966	Percentage Change 1961-66	1961	1966	Percentage Change 1961-66
	No.	No.		\$'000	\$'000	
Alberta	5,921	6,751	+ 14.0	238,268.2	351,374.3	+ 47.5
Amusement services.....	568	685	+ 20.6	16,972.7	28,571.1	+ 68.3
Business services.....	341	434	+ 27.3	17,553.1	30,173.0	+ 71.9
Personal services.....	1,966	2,416	+ 22.9	28,463.9	42,756.4	+ 50.2
Repair services.....	397	349	- 12.1	8,836.2	7,345.8	- 16.9
Hotels and restaurants.....	2,257	2,455	+ 8.8	134,342.2	197,750.9	+ 47.2
Miscellaneous services.....	392	412	+ 5.1	32,100.1	44,777.1	+ 39.5
British Columbia	8,957	10,222	+ 14.1	314,417.2	522,931.9	+ 66.3
Amusement services.....	598	807	+ 34.9	24,903.7	44,556.8	+ 78.9
Business services.....	628	761	+ 21.2	28,307.1	46,076.7	+ 62.8
Personal services.....	2,973	3,466	+ 16.6	42,377.1	66,929.7	+ 57.9
Repair services.....	296	243	- 17.0	6,110.9	6,523.5	+ 6.8
Hotels and restaurants.....	3,965	4,374	+ 10.3	182,130.0	298,125.1	+ 63.7
Miscellaneous services.....	497	571	+ 14.9	30,588.4	60,720.1	+ 98.5
Yukon and Northwest Territories	156	201	+ 28.8	8,163.7	12,480.5	+ 52.9
Amusement services.....	12	21	+ 75.0	307.0	540.9	+ 76.2
Business services.....	4	5	+ 25.0	85.7	117.5	+ 37.1
Personal services.....	33	35	+ 6.1	480.9	684.4	+ 42.3
Repair services.....	5	6	+ 20.0	34.9	196.3	+ 462.5
Hotels and restaurants.....	94	121	+ 28.7	7,047.7	10,570.6	+ 50.0
Miscellaneous services.....	8	13	+ 62.5	207.5	370.8	+ 78.7
Canada	84,765	93,791	+ 10.6	2,979,849.8	4,587,001.4	+ 53.9
Amusement services	5,835	7,422	+ 27.2	253,290.5	441,905.5	+ 74.5
Business services	4,024	5,072	+ 26.0	272,684.0	492,387.6	+ 80.6
Personal services	32,123	35,655	+ 11.0	406,974.2	596,480.7	+ 46.6
Repair services	3,446	2,828	- 17.9	64,760.2	65,572.2	+ 1.3
Hotels and restaurants	34,626	37,508	+ 8.3	1,660,787.8	2,397,258.4	+ 44.3
Miscellaneous services	4,711	5,306	+ 12.6	321,353.1	593,397.0	+ 84.7

**Subsection 2.—Intercensal Surveys of Retail, Wholesale and
Service Trades**

Retail Trade

The trend of retail trade is one of the most accurate barometers of the economic health and well-being of the nation. In 1967, retailers accounted for 57.1 p.c. of personal disposable income available to Canadians and 63.1 p.c. of total personal expenditure on consumer goods and services. The value of retail sales, estimated from intercensal sample surveys, increased by 31 p.c. during the period 1964-68.

Table 5 gives estimates of retail sales by province and by kind of business in two parts: 1964-67 on the 1961 base; and 1967 and 1968 on a partial (i.e., definitional) 1966 base. The new series for the 1961-68 period, revised in accordance with 1966 Census definitions and results, will be available in 1969 (see p. 910). Commencing in 1967 (second series), a new kind-of-business classification was introduced called "general merchandise stores". Such stores were previously included as part of the "all other stores" category but were taken out of that category as part of the reclassification of non-department store operations of department stores, made necessary by definitional changes in the 1966 Census.

5. —Retail Trade, by Province and by Kind of Business, 1961-67 (1961 Base) and 1967-68 (1966 Base)

Province and Kind of Business	1961 Base				1966 Base ¹		Percent- age Change 1967-68
	1964	1965	1966 ²	1967	1967	1968 ³	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	
Province							
Newfoundland.....	340	375	405	429	447	471	+ 5.4
Prince Edward Island.....	92	98	101	106	106	112	+ 6.2
Nova Scotia.....	663	711	754	801	791	867	+ 9.6
New Brunswick.....	507	550	580	603	604	654	+ 8.2
Quebec.....	5,108	5,515	5,857	6,271	6,274	6,460	+ 3.0
Ontario.....	7,299	7,951	8,497	8,941	9,023	9,807	+ 8.7
Manitoba.....	887	937	1,029	1,108	1,110	1,146	+ 3.2
Saskatchewan.....	912	967	1,024	1,062	1,059	1,071	+ 1.1
Alberta.....	1,503	1,599	1,745	1,883	1,855	2,028	+ 7.6
British Columbia ⁴	2,040	2,242	2,421	2,581	2,591	2,796	+ 7.9
Canada.....	19,351	20,954	22,416	23,785	23,890	25,412	+ 6.4
Kind of Business							
Grocery and combination stores.....	4,356	4,655	4,989	5,304	5,304	5,671	+ 6.9
All other food stores.....	718	767	827	854	854	888	+ 4.0
Department stores.....	1,924	2,054	2,201	2,372	2,158	2,376	+10.1
General merchandise stores.....	4	4	4	4	720	772	+ 7.2
General stores.....	670	700	752	798	849	895	+ 5.4
Variety stores.....	463	550	628	701	526	494	- 6.1
Motor vehicle dealers.....	3,379	3,847	3,904	3,935	3,935	4,243	+ 7.8
Service stations and garages.....	1,788	1,903	2,033	2,170	2,170	2,332	+ 7.4
Men's clothing stores.....	315	333	342	353	353	367	+ 4.1
Women's clothing stores.....	363	385	414	440	441	453	+ 2.7
Family clothing stores.....	269	288	304	325	330	344	+ 4.3
Shoe stores.....	226	244	263	289	289	301	+ 4.1
Hardware stores.....	328	344	375	401	401	416	+ 3.8
Furniture, TV, radio and appliance stores.....	643	701	763	812	822	859	+ 4.5
Fuel dealers.....	357	362	368	394	394	411	+ 4.4
Drug stores.....	538	586	643	696	696	730	+ 4.9
Jewellery stores.....	180	194	204	221	221	226	+ 2.4
All other stores.....	2,834	3,041	3,406	3,720	3,427	3,634	+ 6.0

¹ The 1966 Census definition of department stores (see preceding text). ² These data for 1966 were derived from a sample survey and are therefore dissimilar from the 1966 Census results given in Tables 1-3. ³ Includes the Yukon and Northwest Territories. ⁴ Prior to 1967, general merchandise stores formed part of the "All other stores" category.

Chain* and Independent Stores.—Within the framework of retail trade, chains and independent retailers compete with one another to achieve or retain a viable share of the total market. In some kinds of business, such as general stores, motor vehicle dealers, service stations and garages, men's clothing stores and drug stores, independent merchants have maintained a dominant position; in others, such as department stores, variety stores and general merchandise stores, chains account for the largest proportion of sales. However, the competitive struggle continues without interruption, particularly among grocery and combination stores, women's clothing stores and shoe stores. The constantly shifting balance between chain and independent stores is shown in Tables 6 and 7. The former indicates the rate of growth in each kind of business from 1967 to 1968 (figures are shown in the last three columns of Table 5) and the latter shows the changes in market share held by chain and independent retailers in each kind of business.

* A retail chain is defined by DBS as "an organization operating four or more retail stores in the same kind of business under the same legal ownership".

6.—Sales of Chain and Independent Stores, by Kind of Business, 1967 and 1968

Kind of Business	Chain Stores			Independent Stores		
	1967	1968	Per-centage Change 1967-68	1967	1968	Per-centage Change 1967-68
	\$'000,000	\$'000,000		\$'000,000	\$'000,000	
Grocery and combination stores.....	2,533	2,757	+ 8.8	2,771	2,915	+ 5.2
All other food stores.....	67	70	+ 4.5	787	818	+ 3.9
Department stores.....	2,158	2,376	+10.1	—	—	—
General merchandise stores.....	503	549	+ 9.1	217	223	+ 2.8
General stores.....	78	84	+ 8.0	771	811	+ 5.2
Variety stores.....	430	394	- 8.3	96	99	+ 3.6
Motor vehicle dealers.....	60	63	+ 4.8	3,875	4,180	+ 7.9
Service stations and garages.....	50	61	+20.8	2,120	2,271	+ 7.1
Men's clothing stores.....	56	66	+17.6	297	301	+ 1.5
Women's clothing stores.....	144	150	+ 4.3	297	303	+ 2.0
Family clothing stores.....	82	88	+ 7.3	248	256	+ 3.2
Shoe stores.....	124	130	+ 5.2	165	170	+ 3.3
Hardware stores.....	65	71	+ 8.1	336	346	+ 3.0
Furniture, TV, radio and appliance stores.....	138	148	+ 7.0	684	711	+ 4.0
Fuel dealers.....	43	48	+11.7	351	363	+ 3.5
Drug stores.....	95	103	+ 9.0	601	627	+ 4.2
Jewellery stores.....	64	67	+ 4.6	157	159	+ 1.5
All other stores.....	1,327	1,404	+ 5.7	2,100	2,230	+ 6.2
Totals, All Stores.....	8,018	8,629	+ 7.6	15,872	16,783	+ 5.7

7.—Market Share of Chain and Independent Stores, by Kind of Business, 1967 and 1968

Kind of Business	Chain Stores		Independent Stores	
	1967	1968	1967	1968
	p.c.	p.c.	p.c.	p.c.
Grocery and combination stores.....	47.8	48.6	52.2	51.4
All other food stores.....	7.8	7.9	92.2	92.1
Department stores.....	100.0	100.0	—	—
General merchandise stores.....	69.9	71.2	30.1	28.8
General stores.....	9.1	9.4	90.9	90.6
Variety stores.....	81.8	79.9	18.2	20.1
Motor vehicle dealers.....	1.5	1.5	98.5	98.5
Service stations and garages.....	2.3	2.6	97.7	97.4
Men's clothing stores.....	15.9	17.9	84.1	82.1
Women's clothing stores.....	32.7	33.2	67.3	66.8
Family clothing stores.....	24.8	25.5	75.2	74.5
Shoe stores.....	42.9	43.3	57.1	56.7
Hardware stores.....	16.3	17.0	83.7	83.0
Furniture, TV, radio and appliance stores.....	16.8	17.2	83.2	82.8
Fuel dealers.....	11.0	11.7	89.0	88.3
Drug stores.....	13.6	14.2	86.4	85.8
Jewellery stores.....	29.1	29.7	70.9	70.3
All other stores.....	38.7	38.6	61.3	61.4
Totals, All Stores.....	33.6	34.0	66.4	66.0

Department Stores.—In 1968, department stores accounted for a higher proportion of total sales than most other forms of retailing (exceeded only by grocery and combination stores and motor vehicle dealers). Their sales of \$2,376,100,000 represented 9.4 p.c. of the total retail trade and 12.1 p.c. of the business done by competing firms (all trades other than motor vehicle dealers, fuel dealers and parts of the "all other stores" classification). Department store sales in 1968 were 10.1 p.c. higher than in 1967, the largest increase among the 18 specified trades. However, growth of the various departments within the department stores has not been consistent, as Table 8 shows.

8.—Department Store Sales, by Departments, 1967 and 1968

Department	Sales		Percentage Change 1967-68
	1967	1968	
	\$'000	\$'000	
Women's and misses' dresses, housedresses, aprons and uniforms.....	65,796	69,043	+ 4.9
Women's and misses' coats and suits.....	50,623	53,760	+ 6.2
Women's and misses' sportswear.....	87,617	96,518	+10.2
Furs.....	16,592	15,349	- 7.5
Infants' and children's wear and nursery equipment.....	60,549	66,715	+10.2
Girls' and teenage girls' wear.....	36,136	39,358	+ 8.9
Lingerie and women's sleepwear.....	44,399	47,162	+ 6.2
Intimate apparel.....	34,443	35,573	+ 3.3
Millinery.....	12,317	12,536	+ 1.8
Women's and girls' hosiery.....	33,920	41,372	+22.0
Women's and girls' gloves, mitts and accessories.....	39,365	41,867	+ 6.4
Womens', misses' and children's footwear.....	71,845	77,738	+ 8.2
Men's clothing.....	88,031	97,117	+10.3
Men's furnishings.....	118,911	131,206	+10.3
Boys' clothing and furnishings.....	48,812	52,634	+ 7.8
Men's and boys' footwear.....	40,115	45,057	+12.3
Food and kindred products.....	111,883	126,488	+13.1
Toiletries, cosmetics and drugs.....	102,087	116,470	+14.1
Photographic equipment and supplies.....	32,391	35,107	+ 8.4
Piece goods.....	33,593	34,095	+ 1.5
Linens and domestics.....	59,048	61,460	+ 4.1
Smallwares and notions.....	30,324	31,681	+ 4.5
China and glassware.....	34,468	38,055	+10.4
Floor coverings.....	54,500	59,350	+ 8.9
Draperies, curtains and furniture coverings.....	41,428	44,809	+ 8.2
Lamps, pictures, mirrors and all other home furnishings.....	20,422	22,324	+ 9.3
Furniture.....	112,013	120,396	+ 7.5
Major appliances.....	93,505	104,358	+11.6
TV, radio and music.....	81,637	93,743	+14.8
Housewares and small electrical appliances.....	67,969	76,219	+12.1
Hardware, paints, wallpaper, etc.....	54,285	63,322	+16.6
Plumbing, heating and building materials.....	18,051	19,778	+ 9.6
Jewellery.....	42,446	44,287	+ 4.3
Toys and games.....	43,727	49,016	+12.1
Sporting goods and luggage.....	56,886	64,796	+13.9
Stationery, books and magazines.....	58,033	62,577	+ 7.8
Gasoline, oil, auto accessories, repairs and supplies.....	39,004	47,146	+20.9
Receipts from meals and lunches.....	43,700	48,916	+11.9
Receipts from repairs and services.....	76,953	88,702	+15.3
All other departments.....			
Totals, All Departments.....	2,157,824	2,376,100	+10.1

Voluntary Group Stores.—In order to stem the continuing encroachment of chains and department stores on many kinds of business, independent retailers have turned increasingly in recent years to affiliation in a voluntary group organization. For a number of reasons, this strategy has met with widely varying degrees of success in the four trades principally affected by the voluntary group concept—grocery and combination stores, drug stores, hardware stores and variety stores. Through such group affiliation, independent retailers were afforded the opportunity to gain many, if not all, of the benefits enjoyed by chain store firms—mass purchasing power, centralized buying, lower per-unit advertising costs and a number of important management services. As sponsors and/or suppliers of many voluntary groups, wholesalers also gained, particularly through the streamlining of their selling and order-filling systems.

The effects of voluntary group activity during the 1964-67 period are shown in Table 9. In the case of grocery and combination stores and hardware stores, sales by affiliated independent retailers grew at a much faster rate than both non-affiliated independents and chains. Variety stores operating in a voluntary group setting out-paced non-affiliated stores but lagged behind the chains (possibly because the latter category included

the department store outlets of variety chain organizations). Only affiliated drug stores fared badly, increasing at less than one third of the rate of growth experienced by non-affiliated drug stores and chains.

9.—Retail Sales in Selected Trades, classified by Chain, Voluntary Group and Non-affiliated Retailers, 1964 and 1967

Store Type	Sales		Percentage Change 1964-67
	1964	1967	
	\$'000	\$'000	
Grocery and Combination Stores	4,355,948	5,304,102	+21.8
Corporate chain stores.....	2,057,748	2,532,813	+23.1
Independent stores.....	2,298,200	2,771,289	+20.6
Voluntary group stores.....	1,016,951	1,579,197	+55.3
Non-affiliated stores.....	1,281,249	1,192,092	-7.0
	p.c.	p.c.	
Sales of voluntary group stores as a proportion of independent store sales	44.2	57.0	...
	\$'000	\$'000	
Drug Stores	537,644	695,011	+29.5
Corporate chain stores.....	63,621	94,849	+49.1
Independent stores.....	474,023	601,162	+26.8
Voluntary group stores.....	301,873	349,535	+15.8
Non-affiliated stores.....	172,150	251,627	+46.2
	p.c.	p.c.	
Sales of voluntary group stores as a proportion of independent store sales	63.7	58.1	...
	\$'000	\$'000	
Hardware Stores	328,409	400,961	+22.1
Corporate chain stores.....	46,710	65,349	+39.9
Independent stores.....	281,699	335,612	+19.1
Voluntary group stores.....	105,506	192,379	+82.3
Non-affiliated stores.....	176,193	143,233	-18.7
	p.c.	p.c.	
Sales of voluntary group stores as a proportion of independent store sales	37.5	57.3	...
	\$'000	\$'000	
Variety Stores¹	462,902	701,417	+51.5
Corporate chain stores ²	384,895	604,986	+57.2
Independent stores.....	78,007	96,431	+23.6
Voluntary group stores.....	32,145	44,974	+39.9
Non-affiliated stores.....	45,852	51,457	+12.2
	p.c.	p.c.	
Sales of voluntary group stores as a proportion of independent store sales	41.2	46.6	...

¹ Series 1, Table 5.

² Includes department store outlets operated by variety store chains.

New Motor Vehicle Sales.—The largest homogeneous group of commodities sold within the confines of retail outlets is embodied in the classification "new motor vehicles". In the only *current* survey of retail trade carried on at the commodity level (all others are based on "kind of business"), new motor vehicles are taken to include private passenger cars and taxis, trucks, buses and other commercial vehicles sold at retail.

As shown in Table 10, sales of new motor vehicles in 1968 exceeded the \$3,000,000,000-mark for the first time. Automobile dealers and distributors effected sales of 887,007 new motor vehicles with a value at the consumer level of \$3,110,630,000; this occurred despite the fact that, commencing in 1967, automobile manufacturers and distributors were requested to report sales based on the *actual cost to purchasers*, rather than on manufacturers' suggested list prices as in previous years.

Table 11 shows new motor vehicle sales, by type of vehicle and by source of origin, for 1967 and 1968. It will be noted that sales of overseas-manufactured vehicles increased considerably more than those of domestic and United States manufacture—47.4 p.c. compared with 8.8 p.c.—but accounted for less than one twelfth of the total value.

10.—Retail Sales of New Motor Vehicles, 1959-68

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	\$	No.	\$	No.	\$
1959.....	425,038	1,240,961,000	77,588	299,207,000	502,626	1,540,168,000
1960.....	447,771	1,289,073,000	75,417	285,754,000	523,188	1,574,827,000
1961.....	437,319	1,290,026,000	74,160	261,382,000	511,479	1,551,408,000
1962.....	502,565	1,482,407,000	82,645	300,509,000	585,210	1,782,916,000
1963.....	557,787	1,716,121,000	97,202	345,918,000	654,989	2,062,039,000
1964.....	616,759	1,936,258,000	109,120	401,544,000	725,879	2,337,802,000
1965.....	708,716	2,267,314,000	122,279	472,015,000	830,995	2,739,329,000
1966.....	694,820	2,274,083,000	132,611	550,508,000	827,431	2,824,591,000
1967.....	679,435	2,210,309,000	135,872	588,057,000	815,307	2,798,366,000
1968 ^p	739,517	2,476,386,000	147,490	634,244,000	887,007	3,110,630,000

11.—Retail Sales of New Motor Vehicles, by Type and Source, 1967 and 1968

Type of Vehicle and Source	Units			Retail Value		
	1967	1968 ^p	Percentage Change 1967-68	1967	1968 ^p	Percentage Change 1967-68
	No.	No.		\$'000	\$'000	
Passenger Cars.....	679,435	739,517	+ 8.8	2,210,309	2,476,386	+ 12.0
Canadian and U.S. manufacture....	605,049	637,244	+ 5.3	2,045,733	2,238,385	+ 9.4
Overseas manufacture.....	74,386	102,273	+ 37.5	164,576	238,001	+ 44.6
Trucks and Buses.....	135,872	147,490	+ 8.5	588,057	634,244	+ 7.9
Canadian and U.S. manufacture....	133,330	142,202	+ 6.7	581,367	619,775	+ 6.6
Overseas manufacture.....	2,542	5,288	+108.0	6,690	14,469	+116.3
Totals, All Vehicles.....	815,307	887,007	+ 8.8	2,798,366	3,110,630	+ 11.2
Canadian and U.S. manufacture....	738,379	779,446	+ 5.6	2,627,100	2,858,160	+ 8.8
Overseas manufacture.....	76,928	107,561	+ 39.8	171,266	252,470	+ 47.4

Direct Selling.—In addition to being sold in retail stores, consumer goods often reach the household user through other, more direct channels of distribution, commonly described as "direct selling". These channels are characterized by the fact that the commodities handled bypass the retail outlet completely in moving from manufacturer to distributor to household consumer. For a number of years, the Dominion Bureau of Statistics has conducted a survey of one form of direct selling—that carried on by vending machine operators—and has recently initiated a second and more thorough examination of the direct selling engaged in by manufacturers and distributors specializing in direct-sales methods.

Vending Machine Operators.—The survey of vending machine operators is designed to measure the value of sales through automatic vending machines owned or operated by vending machine operators, including soft-drink bottlers engaged in vending activities on a regular year-round basis. In 1967, such sales reached a high of \$119,650,900, 11.3 p.c. above the 1966 total. As shown in Table 12, there were 790 vending machine firms in this business during 1967, operating more than 91,000 merchandise vending machines in a variety of locations across the country. These firms also operated 721 microwave and infra-red ovens, as well as 1,431 coin and bill changers.

Although vending machines can be used to distribute many types of commodities, the largest proportion of sales has been accounted for consistently by three main lines: tobacco products; hot drinks; and cold drinks vended in bottles, cans, cartons and disposable cups. The share of the market held by these three commodity lines rose in 1967 to \$98,060,307, or 82.0 p.c.

12.—Vending Machine Operators, 1959-67

Year	Firms	Machines	Sales
	No.	No.	\$
1959.....	479	40,237	33,741,900
1960.....	521	47,770	38,710,800
1961.....	579	65,028	44,959,700
1962.....	600	73,397	57,799,200
1963.....	673	78,477	67,580,000
1964.....	651	75,392	78,561,800
1965.....	764	85,091	89,815,400
1966.....	769	85,880 ¹	107,539,600
1967.....	790	93,441 ¹	119,650,900

¹ Includes microwave and infra-red ovens and coin and bill changers.

13.—Value and Percentage Distribution of Sales by Vending Machine Operators, by Product, 1966 and 1967

Product	1966		1967	
	Sales	Percentage of Total	Sales	Percentage of Total
	\$		\$	
Tobacco products.....	54,771,457	50.9	58,103,111	48.6
Ice cream.....	228,056	0.2	502,072	0.4
Milk and milk products.....	2,744,811	2.6	2,907,033	2.4
Cold Drinks—				
Vended in bottles, cans or cartons.....	5,977,566	5.6	8,768,981	7.3
Vended in disposable cups.....	11,236,106	10.4	13,522,003	11.3
Hot drinks (coffee, tea, hot chocolate and cup-vended soup)	15,941,774	14.8	17,666,212	14.8
Bulk (unwrapped) confectionery.....	1,255,469	1.2	1,243,583	1.0
Packaged confectionery.....	4,422,518	4.1	4,694,338	3.9
Pastries.....	4,549,494	4.2	6,079,985	5.1
Canned hot foods and canned soup.....	4,914,231	4.6	4,544,902	3.8
Fresh foods (sandwiches, salads, casseroles, hot dogs, etc.)	1,334,739	1.2	1,372,738	1.2
Other foods (fruit, potato chips, etc.).....	122,897	0.1	174,144	0.1
Other non-food items.....	40,625	0.1	71,800	0.1
Totals, All Products.....	107,539,643	100.0	119,650,902	100.0

Direct Selling by Manufacturers and Specialist Agencies.—The first annual survey of direct selling was undertaken by DBS during 1968; the only data published previously were those contained in 1961 Census, *Retail Trade: General Review* (Catalogue No. 99-534). Unlike the 1961 survey, which covered all firms (manufacturing, wholesaling, retailing, etc.) engaged even partially in selling goods directly to household consumers, the new study was restricted in scope to manufacturers and selected agencies specializing in direct sales methods. In order to allow an analysis of growth in this area, data were obtained for both 1966 and 1967.

As shown in Table 14, the direct sales of manufacturers and specialized agencies amounted to \$645,586,000 during 1967, an increase of 5.1 p.c. over 1966 and 31.5 p.c. over the 1961 total of \$490,985,000. Among the industries surveyed, the largest share of sales was held by the following, with percentage change from 1961 shown in parentheses: dairy products (+19.1); newspapers, magazines and periodicals (+40.7); bakery products (-24.5); cosmetics (+62.8); and books (+23.3). Large increases were also recorded in direct sales of kitchenware and phonograph records. To supplement these data and to provide a more complete coverage of the direct selling field, it is intended to expand the survey by stages to include the direct sales of wholesalers, service establishments, contractors and others engaged in this form of activity.

14.—Direct Selling by Manufacturers and Specialist Agencies, 1961, 1966 and 1967

Commodities (Industry Grouping)	Sales			Methods of Distribution ¹ (1967 Sales=100)		
	1961	1966	1967	Manu- facturing Premises	Telephone and/or Mail- Order	Door-to- Door Can- vassing
	\$'000	\$'000	\$'000	p.c.	p.c.	p.c.
Meat, fish and poultry.....	5,108	5,408	4,925	95	1	2
Frozen food plans.....	—	21,799	23,072	44	52	4
Fruits, vegetables, juices, etc.....	3,144	5,766	5,607	—	—	100
Dairy products.....	156,833	175,151	186,711	—	—	100
Bakery products.....	80,812	67,289	61,000	—	—	100
Canvas awnings, tents, etc.....	1,463	2,845	3,451	81	10	6
Clothing.....	5,570	8,767	8,667	19	46	12
Furs and fur coats.....	1,908	2,455	2,590	100	—	—
Furniture.....	3,802	5,286	5,523	93	5	2
Stamps, coins and stationery.....	—	5,634	5,950	6	90	4
Books.....	41,494	45,352	51,164	—	59	40
Newspapers, magazines and periodicals.....	76,479	103,743	107,631	1	21	75
Kitchenware and utensils.....	5,460	16,315	18,431	5	1	91
Electrical appliances.....	20,246	32,279	34,617	11	3	85
Nursery seeds, stock and fertilizer.....	—	3,509	3,957	—	76	—
Pharmaceuticals and medicines.....	11,164	5,377	5,219	—	4	95
Brushes, soaps and household cleaners.....	15,408	17,414	17,428	—	—	100
Cosmetics.....	33,389	50,102	54,353	—	—	100
Phonograph records.....	8,308	14,453	18,140	—	100	—
Miscellaneous ²	19,357	25,399	27,151	55	18	25
Totals, All Commodities.....	490,985	614,303	645,586	8	16	76

¹ The three components specified may not add to 100 p.c. due to omission of sales from roadside stands, market stalls, kiosks and other unspecified direct selling channels.

² Includes leather goods, jewellery and silverware,

aluminum products, textiles, boats, etc.

Operating Results of Retail Stores.—As an adjunct to its regular current publications on retail trade, DBS in 1963 initiated a triennial series of surveys on the operating results of retail stores. In the course of these surveys, data were collected on sales, inventory, cost of goods sold, stock turnover and operating expenses. Publications in this series include detailed information on the operating results of chain stores and independent stores; incorporated and unincorporated businesses; those that own their own premises and those that rent; and all types classified by sales size.

Table 15 gives a summary of profit-and-loss data for a number of trades in the food field: grocery stores, fruit and vegetable stores, meat markets, combination stores and dairy products stores. The data are expressed in percentage terms, as a proportion of the average net sales dollar, and direct comparisons from one trade or category to another are therefore possible.

15.—Operating Results of Selected Food Stores as a Percentage of Net Sales, 1966

NOTE.—Independent stores include both incorporated and unincorporated businesses.

Item	Combination Stores		Dairy Products Stores		Fruit and Vegetable Stores	Grocery Stores	Meat Markets
	Independent	Chain	Independent	Chain	Independent	Independent	Independent
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Gross Profit	16.50	21.33	44.05	37.68	21.07	15.91	20.88
Operating Expenses	12.27	17.84	33.00	32.72	14.49	9.66	14.54
Salaries and Wages—							
Executives.....		0.18		1.26			
Other employees ¹	4.89	9.17	14.94	18.89	4.57	2.33	6.05
Employees' benefits.....		0.61		0.65			
Delivery expenses ²	1.30	0.27	0.02	2.42	1.90	1.13	1.60
Occupancy Expenses.....	3.32	4.55	11.94	7.21	5.46	3.96	4.00
Rent or occupancy cost.....	0.58		4.02		2.23	0.66	1.04
Heat, light and power.....	0.64	2.97	1.75	4.67	0.71	0.95	0.82
Taxes and licences ³	0.49	0.16	1.20	0.85	0.58	0.62	0.42
Insurance ³	0.34	0.08	0.39	0.32	0.42	0.43	0.30
Repairs and maintenance ³	0.41	0.45	1.53	0.84	0.57	0.45	0.46
Depreciation allowances ³	0.88	0.89	3.06	1.85	0.85	0.85	0.96
Office and store supplies.....	0.50	0.98	1.75	0.28	1.25	0.49	0.98
Advertising.....	0.76	1.40	1.12	0.27	0.24	0.30	0.35
Travelling expenses.....	4	0.19	4	0.23	4	4	4
Communications.....	4	0.06	4	0.25	4	4	4
Net loss on bad debts.....	0.16	0.01	0.05	0.03	—	0.16	0.08
All other expenses.....	1.34	0.42	3.19	1.23	1.07	1.29	1.48
Net Operating Profit	4.23	3.49	11.05	4.96	6.58	6.25	6.34
Non-trading income.....	0.44	1.08	0.20	3.91	0.88	0.50	0.22
Non-trading expense.....	0.14	0.44	0.03	..	0.47	0.11	0.02
Net profit before deduction of proprietors' salaries, withdrawals and income tax.....	4.53	..	11.22	..	6.99	6.64	6.54
Net profit before income tax deduction.....	..	4.13	..	8.87	..	..	..
Income tax.....	..	1.77	..	2.95	..	..	..
Final Net Profit.....	..	2.36	..	5.92	..	..	..

¹ Except delivery employees.² Including salaries and wages of delivery employees.³ Excluding

amount attributed to real estate—see "Rent or occupancy cost".

⁴ Shown in "All other expenses".

Wholesale Trade

The sales of wholesalers, as estimated in the course of a monthly sample survey of such firms, have increased consistently over the past several years, reaching a new high in 1968 of \$17,038,000,000, almost 5 p.c. above 1967. Consumer goods wholesalers experienced a 7.7-p.c. increase in sales compared with a 2.4-p.c. rise recorded by wholesalers of industrial goods. Only in the latter category were there declines in any specific trades; the sales of coal and coke, grain, and farm machinery wholesalers were all lower in 1968 than in the previous year.

Table 16 shows the annual sales of 26 wholesale business groups (wholesale merchants only) during the period 1964-68. These data reflect changes in the wholesale trade series brought about by revisions to a 1964 benchmark, updating the figures from the 1951 benchmark. The intercensal revisions, part of which are included here, were published in a special report released by DBS in April 1969.

16.—Wholesale Sales, by Kind of Business, 1964-68

NOTE.—Totals do not include the business transactions of manufacturers' sales branches, agents and brokers, primary product dealers and petroleum bulk tank plants and distributors. Components may not add to totals due to rounding.

Kind of Business	1964	1965	1966	1967	1968	Percentage Change 1967-68
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	
Consumer Goods Trades.....	6,132	6,550	6,956	7,437	8,012	+ 7.7
Automotive parts and accessories..	522	551	594	644	703	+ 9.2
Motor vehicles.....	187	211	194	220	324	+47.4
Drugs and drug sundries.....	302	326	363	388	412	+ 6.2
Clothing and furnishings.....	169	175	179	189	197	+ 4.2
Footwear.....	37	39	41	41	43	+ 5.4
Other textiles and clothing accessories.....	295	306	305	315	322	+ 1.9
Household electrical appliances...	250	298	346	378	401	+ 6.2
Tobacco, confectionery and soft drinks.....	523	557	600	667	715	+ 7.2
Fresh fruits and vegetables.....	346	358	370	386	431	+11.8
Meat and dairy products.....	341	397	448	463	469	+ 1.1
Floor coverings.....	102	105	105	109	111	+ 1.9
Groceries and food specialties....	2,076	2,240	2,396	2,550	2,746	+ 7.7
Hardware.....	454	454	484	491	494	+ 0.6
Other consumer goods.....	529	535	531	596	645	+ 8.3
Industrial Goods Trades.....	7,122	7,858	8,594	8,814	9,026	+ 2.4
Coal and coke.....	96	97	84	82	72	-11.9
Grain.....	1,306	1,306	1,418	1,459	1,443	- 1.1
Electrical wiring supplies, construction materials, apparatus and equipment.....	203	232	277	290	298	+ 2.8
Other construction materials and supplies, including lumber.....	1,662	1,752	1,929	2,006	2,205	+ 9.9
Farm machinery.....	569	640	723	736	630	-14.3
Industrial and transportation equipment and supplies.....	1,207	1,421	1,594	1,599	1,607	+ 0.5
Commercial, institutional and service equipment and supplies..	240	260	309	356	377	+ 6.0
Newsprint, paper and paper products.....	308	322	364	372	392	+ 5.4
Scientific and professional equipment.....	155	167	199	229	243	+ 6.0
Iron and steel.....	423	501	539	530	534	+ 0.7
Junk and scrap.....	277	329	354	348	350	+ 0.7
Other industrial goods.....	677	831	803	809	876	+ 8.3
Totals, All Trades.....	13,255	14,408	15,550	16,250	17,038	+ 4.8

In addition to the principal surveys of wholesalers (monthly) and other wholesale distributors and agents (annually), two annual surveys of wholesale sales at the commodity level have been completed—farm implements and equipment, and construction machinery and equipment. It should be noted that figures on farm implement and equipment sales are also published monthly, in aggregate form, based on the data reported by a panel of major-line companies.

Farm Implements and Equipment.—After a number of years of steadily increasing growth, the sales of farm implements and equipment (valued at wholesale prices) declined markedly during 1968 when, at \$362,004,000, they were 16.3 p.c. lower than the \$432,299,000 recorded in 1967. Saskatchewan, with the largest volume of sales, suffered the greatest decline (24.1 p.c.), its second in two years. Only in British Columbia were sales higher (by 7.7 p.c.) than in 1967.

Table 17 gives data on sales by province and by major group of commodities for 1964-68. Sales for repair parts, not shown, were \$63,092,000 in 1968, 1.8 p.c. higher than the record \$61,999,000 reached in the previous year.

17.—Sales of Farm Implements and Equipment, by Province and by Major Group, 1964-68

NOTE.—Data are based on a commodity survey and therefore exclude sales of other products and receipts from secondary activities, including repairs, carried out by respondents. The figures are not comparable with those given in Table 16.

Province and Major Group	1964	1965	1966	1967	1968	Percentage Change 1967-68
	\$'000	\$'000	\$'000	\$'000	\$'000	
Province						
Atlantic Provinces.....	8,044	9,049	11,259	13,101	10,998	-16.1
Quebec.....	32,633	31,664	38,874	49,495	44,945	- 9.2
Ontario.....	69,385	72,936	87,085	96,865	86,104	-11.1
Manitoba.....	45,230	49,341	55,774	50,923	42,501	-16.5
Saskatchewan.....	96,366	118,768	126,201	116,453	88,345	-24.1
Alberta.....	68,149	82,218	89,403	95,777	78,680	-17.9
British Columbia.....	7,169	7,348	8,318	9,685	10,431	+ 7.7
Totals.....	326,976	371,324	416,914	432,299	362,004	-16.3
Major Group						
Tractors and engines.....	114,067	122,021	149,467	153,064	..	..
Ploughs.....	15,877	17,228	19,659	20,864	..	..
Tilling, cultivating and weeding machinery.....	21,106	23,537	28,807	33,763	..	..
Planting, seeding and fertilizing machinery.....	14,447	15,743	20,117	23,607	..	..
Haying machinery.....	30,867	29,984	29,853	28,975	..	..
Harvesting machinery.....	85,645	113,074	110,032	107,213	..	..
Machines for preparing crops for market or for use.....	11,313	12,894	15,378	14,900	..	..
Farm wagons, boxes and sleighs ¹	3,571	4,376	5,740	5,772	..	..
Barn equipment.....	7,268	7,387	10,078	12,775	..	..
Farm dairy machinery and equipment ²	9,342	8,025	6,816	9,006	..	..
Spraying and dusting equipment.....	2,439	2,385	3,406	4,017	..	..
Pumps and irrigation equipment and miscellaneous farm equipment ³	11,034	14,670	17,561	13,343	..	..

¹ Designated as "Farm wagons, wagon trucks and sleighs" prior to 1964. ² Designated as "Dairy machinery and equipment" prior to 1964. ³ Designated as "Miscellaneous farm equipment" prior to 1967.

Construction Machinery and Equipment.—The first survey of construction machinery and equipment sales was undertaken for the year 1967. Its purpose was to measure the sales of Canadian distributors and manufacturers in this field and to assess the revenue derived from rentals. As shown in Table 18, total sales and rental revenue amounted to \$568,680,000, nearly 80 p.c. of which was realized through the sale of new machinery and equipment. Distributors accounted for approximately 90 p.c. of the totals.

18.—Sales and Rentals of Construction Machinery and Equipment, by Major Commodity Group, 1967^p

Item	Sales of Construction Machinery and Equipment				Rental Revenue	
	New Equipment		Used Equipment		Units	Value
	Units	Value	Units	Value		
	No.	\$	No.	\$		
Tractors.....	3,749	118,386,165	3,339	36,275,189	1,567	14,124,415
Tractor attachments.....	636	2,183,774	548	1,043,546	68	70,127
Scrapers, dig-carry-haul.....	184	13,232,826	289	4,702,394	201	4,183,831
Dump wagons, semi-trailers, heavy-duty, off-highway haulers.....	337	17,294,052	71	1,426,626	60	777,710
Shovel, hoe, or crane, crawler-mounted.....	283	19,422,429	170	3,480,329	146	1,386,509
Shovel, hoe, crane or other attachments.....	111	1,556,272	50	349,307	33	69,833
Cranes, mobile, motorized.....	422	11,815,286	77	1,480,798	161	1,420,419
Tower cranes and contractor hoists..	31	630,693	20	574,305	95	735,092
Trenchers and ditchers.....	139	1,645,177	66	257,694	22	87,966
Graders, road.....	550	17,176,285	373	2,837,216	210	1,154,900
Logging skidders.....	1,843	24,586,134	322	2,354,213	601	2,377,383
Rollers, road.....	193	1,684,749	78	406,142	89	216,036
Compactors, vibratory.....	529	1,279,060	261	982,128	966	1,777,375
Air compressors.....	673	5,681,307	396	2,371,247	1,082	3,993,279
Rock drilling, earth-boring.....	1,126	6,680,442	246	543,988	437	674,444
Pumps, contractors, primers, axial-flow, centrifugal, concrete.....	6,010	3,778,768	557	365,350	1,826	1,229,123
Pavement breakers.....	3,560	1,838,837	268	96,511	1,030	515,314
Trailers, low-platform, heavy-duty..	174	1,118,414	25	29,110	3	2,256
Winches, contractors.....	291	449,448	25	39,041	83	45,155
Concrete machinery.....	743	4,360,151	107	191,960	155	167,607
Bituminous equipment.....	165	4,640,604	42	640,942	24	257,652
Crushing machinery.....	333	8,084,221	79	2,097,132	32	695,669
All other construction machinery.....	...	81,668,321	...	7,782,333	...	6,754,183
All repair parts.....	...	149,091,099	...	7,213,102	...	138,537
Totals.....	...	448,284,514	...	77,540,603	...	42,854,815

Steel Warehousing.—Each month, as part of its surveys in the wholesale trade area, DBS reports on the sale of steel warehousing firms, on a tonnage basis. Table 19 gives comparative data for 1967 and 1968, by main commodity lines.

19.—Sales of Steel Warehousing Firms, by Main Commodity Lines, 1967 and 1968

Item	1967	1968	Percentage Change 1967-68
	tons	tons	
Concrete reinforcing bars.....	74,937	91,009	+21.4
Other hot-rolled bars.....	149,178	150,511	+ 0.9
Wire rods.....	2,020	2,826	+39.9
Cold finished bars.....	1	1	..
Plates.....	227,048	218,488	- 3.8
Sheet and strip, hot-rolled.....	273,165	157,870	+17.6
Sheet and strip, cold-rolled.....	2	163,404	
Galvanized sheet and strip, terne-plate.....	106,968	127,723	+19.4
Heavy structural beams.....	110,856	130,810	+18.0
Bar-size structural shapes.....	69,405	79,604	+14.7
Other structural shapes.....	95,035	96,621	+ 1.7
Miscellaneous metals, ferrous and other.....	1	1	..
Direct mill shipments.....	1	33,276	..

¹ Incomplete response.

² Included in "Sheet and strip, hot-rolled".

³ Not requested.

Service Trades

Hotels.—In addition to its annual hotel survey, DBS also reports semi-annually on the trend of hotel receipts in Canada—based on results obtained from a panel of hotels

having 50 or more rooms. Table 20 shows that the receipts of such hotels increased by nearly 20 p.c. during the 1965-68 period. The best results were experienced in British Columbia and Alberta, the poorest in Newfoundland and Prince Edward Island (combined) and Quebec.

On a year-to-year basis, the greatest rise took place between 1966 and 1967, as Canada's Centennial year celebrations produced a considerable volume of hotel business. The let-down from 1967 to 1968 was most acutely felt in Quebec, which had shown the greatest increase in the previous year. As a result, hotels having 50 or more rooms experienced an over-all decline of 1.4 p.c. during 1968.

20.—Percentage Change in Hotel Receipts, by Province, 1965-68

(Hotels having 50 or more rooms)

Province	Percentage Change			
	1965-66	1966-67	1967-68	1965-68
Newfoundland.....	- 3.5	- 1.1	+ 1.9	- 2.7
Prince Edward Island.....				
Nova Scotia.....	+ 4.9	+ 3.2	+ 8.1	+17.0
New Brunswick.....	+ 2.9	+ 3.2	+10.2	+17.0
Quebec.....	+ 8.5	+19.9	-20.7	+ 3.2
Ontario.....	+ 7.0	+13.3	+ 2.8	+24.6
Manitoba.....	+ 4.5	+11.0	+ 7.1	+24.2
Saskatchewan.....	+ 2.5	+ 5.5	+ 3.2	+11.6
Alberta.....	+ 7.8	+ 4.5	+12.7	+27.0
British Columbia ¹	+12.3	+ 8.4	+ 9.8	+33.7
Canada.....	+ 7.7	+12.5	- 1.4	+19.5

¹ Includes the Yukon and Northwest Territories.

Restaurants.—The same factors that affected hotel business during recent years were also evident in another large area of the service trades—restaurants and other eating places. From 1966 to 1967, restaurant receipts rose by 4 p.c. and reached a new high of \$1,121,000; however, the 1968 results of \$1,109,000 represented a decline of 1 p.c. below the 1967 level. The 1968 loss in revenue was confined to Newfoundland, Quebec (where business rose by 7.9 p.c. in 1967) and Saskatchewan.

As shown in Table 21, restaurant receipts rose by nearly \$177,000,000 (18.9 p.c.) over the 1964-68 period. The largest percentage growth took place in Alberta (33.1 p.c.), British Columbia (33.0 p.c.) and Nova Scotia (24.5 p.c.). Declines were recorded in only two provinces—Newfoundland and Saskatchewan.

21.—Restaurant Receipts, by Province, 1964-68, with Percentage Change, 1967-68

Province	1964	1965	1966	1967	1968	Percentage Change 1967-68
	\$'000	\$'000	\$'000	\$'000	\$'000	
Newfoundland.....	8,048	8,885	9,389	9,106	7,850	-13.8
Prince Edward Island.....	2,908	2,982	3,281	3,234	3,355	+ 3.7
Nova Scotia.....	24,309	27,027	28,777	30,106	30,274	+ 0.6
New Brunswick.....	16,479	17,312	17,863	18,409	19,328	+ 5.0
Quebec.....	333,063	362,061	389,989	421,786	399,184	- 5.4
Ontario.....	325,398	340,575	366,632	373,991	378,146	+ 1.1
Manitoba.....	45,438	46,551	48,914	49,686	49,842	+ 0.3
Saskatchewan.....	38,468	38,598	40,134	38,998	36,912	- 5.3
Alberta.....	60,670	64,098	70,540	76,041	80,754	+ 6.2
British Columbia ¹	78,014	90,211	101,661	99,240	103,772	+ 4.6
Canada.....	932,795	998,303	1,077,180	1,120,597	1,109,416	- 1.0

¹ Includes the Yukon and Northwest Territories.

Motion Picture Theatres.—In 1967, the receipts of motion picture theatres, both regular and drive-in, reached their highest level in the past 12 years (the highest level ever for drive-ins alone). The total of \$103,563,832 received was 9.7 p.c. higher than in 1966, and the amount of amusement taxes increased to \$7,216,034, up 10.7 p.c. over the previous year. The increase in revenues was not evenly split; drive-in theatre receipts grew at a somewhat faster rate (12.3 p.c.) than those of regular motion picture theatres (9.4 p.c.).

In contrast to the revenue and tax increases, the number of admissions for all types of theatres declined in 1967 for the third successive year, dropping 1.4 p.c. to 97,572,894. As in previous years, the decline in admissions was restricted to regular theatres, which lost nearly 2,200,000 customers compared with 1966.

22.—Summary Statistics of Motion Picture Theatre Operations, 1966 and 1967

Item	1966			1967		
	Regular	Drive-in	Total	Regular	Drive-in	Total
Establishments.....No.	1,149	245	1,394	1,156	253	1,409
Receipts.....\$	83,004,592	11,361,647	94,366,239	90,804,524	12,759,308	103,563,832
Amusement taxes.....\$	5,851,617	666,275	6,517,892	6,428,709	787,325	7,216,034
Paid admissions.....No.	87,694,046	11,265,162	98,959,208	85,530,648	12,042,246	97,572,894

Film Distributors.—During 1967, films were distributed by 57 companies through 116 offices located across Canada. These exchanges had total receipts of \$56,551,239 in 1967, compared with \$53,389,163 in the previous year, and paid \$4,667,600 in salaries and wages to 763 employees. (The activities of the National Film Board of Canada are not included here; they are covered in the Board's Annual Report, copies of which are available from the Queen's Printer, Ottawa.)

Receipts from the rental of films increased by \$3,059,938 (5.8 p.c.) during 1967, to reach a new high of \$56,099,098. Revenue derived from rentals for theatrical use amounted to \$37,328,258, for television use \$17,737,654 and for other use \$1,033,186. In addition, \$34,494 was derived from the sale of advertising and \$417,647 from other sources.

New films released for theatrical bookings numbered 945, of which 623 were feature films, 128 cartoons, 110 newsreels and 84 other short subjects. Of the 623 feature films, 210 originated in the United States, 148 in France, 106 in Italy, 70 in Britain, eight in Canada and 81 in other countries.

23.—Summary Statistics of Film Exchanges, 1964-67

Item	1964	1965	1966	1967
Companies.....No.	60	63	62	57
Exchange offices....."	129	128	126	116
Average Employees—				
Male.....No.	410	394	414	376
Female....."	397	373	399	387
Salaries and Wages—				
Male.....\$	2,821,514	2,743,629	3,049,039	3,196,152
Female.....\$	1,261,979	1,268,080	1,376,208	1,471,448
Receipts—				
Film rentals.....\$	40,880,927	46,206,778	53,039,160	56,099,098
Sale of advertising.....\$	98,752	85,503	40,258	34,494
Other sources.....\$	309,122	844,766	309,745	417,647

Motion Picture Production.—In 1967 there were 93 private (i.e., non-government) firms engaged principally in the production and printing of motion picture films and filmstrips for industry, government, education and entertainment purposes. These firms employed 1,161 persons, paid \$6,668,977 in salaries and wages, and had a gross revenue of \$22,734,605, 26.7 p.c. higher than in 1966. Excluded from these data are: television stations; nine government agencies engaged principally in motion picture pro-

duction; and four private firms engaged only partially in this form of activity. The latter firms produced three information or documentary films for television use, three non-theatrical films, 27 commercial advertising films for television, and two sound filmstrips. They derived \$172,118 of their total revenue of \$1,179,428 from this source.

24.—Summary Statistics of Motion Picture Production by Private Firms, 1964-67

Item	1964	1965	1966	1967
Firms.....No.	71	74	82	93
Employees ¹"	953	891	944	1,161
Salaries and wages ¹\$	4,356,119	4,687,194	4,852,789	6,668,977
Gross revenue.....\$	12,694,301	14,257,262	17,943,784	22,734,605
Production.....\$	7,904,674	8,639,638	11,468,394	14,476,088
Printing and laboratory.....\$	4,950,534	4,543,402	5,110,540	7,546,162
Other.....\$	439,193	1,074,222	1,374,850	713,366

¹ Excludes proprietors of unincorporated businesses.

Table 25 shows the motion picture production records of both private industry and government agencies during 1966 and 1967. Of the 9,079 films produced in Canada in the latter year, nearly all (8,995) were in the English or French languages; the total represents an increase of 6.6 p.c. over the 1966 figure. If government production (which fell by 40.3 p.c.) is omitted, the rate of activity in the private sector was 13.5 p.c. higher than in 1966.

In total, private and government film producers printed 58,719,559 ft. of 16mm film and 7,862,392 ft. of 35mm film in black and white; and 36,620,457 ft. of 16mm film and 6,703,260 ft. of 35mm film in colour. Included in these figures were 45 sound motion pictures of five minutes or longer made for other than Canadian sponsors.

25.—Canadian Motion Picture Production, by Type of Film, 1966 and 1967

Year and Type of Production	Private Industry				Govern- ment	Private and Govern- ment
	Quebec	Ontario	Other Provinces	Total		
1966	No.	No.	No.	No.	No.	No.
Films in English or French	1,660	5,327	397	7,384	1,025	8,409
Theatrical features, 60 minutes or longer.....	3	—	—	3	3	6
Theatrical shorts, less than 60 minutes.....	2	3	1	6	38	44
Television entertainment.....	84	7	15	106	—	106
Television, information or documentary.....	210	162	14	386	161	547
Non-theatrical (also non-TV) motion pictures.....	22	184	33	239	92	331
Silent motion pictures.....	—	98	105	203	116	319
TV commercials (two minutes or less).....	188	2,785	194	3,167	—	3,167
Theatre commercials (two minutes or less).....	8	—	—	8	—	8
Other (newsreels, newsclips, trailers, titles, production services, etc.).....	1,143	2,072	34	3,249	612	3,861
Silent filmstrips (slide films).....	—	7	—	7	3	10
Sound filmstrips (slide films) with records..	—	9	1	10	—	10
Films in Other than English or French	—	16	1	17	88	105
1967	No.	No.	No.	No.	No.	No.
Films in English or French	2,758	5,210	415	8,383	612	8,995
Theatrical features, 60 minutes or longer.....	—	4	—	4	3	7
Theatrical shorts, less than 60 minutes.....	2	5	—	7	33	40
Television entertainment.....	509	440	39	988	—	988
Television, information or documentary.....	366	167	24	557	57	614
Non-theatrical (also non-TV) motion pictures.....	54	309	20	383	127	510
Silent motion pictures.....	6	403	103	512	154	666
Television commercials (two minutes or less).....	300	2,589	195	3,084	—	3,084
Theatre commercials (two minutes or less).....	5	4	1	10	—	10
Other (newsreels, newsclips, trailers, titles, production services, etc.).....	1,486	671	25	2,182	234	2,416
Silent filmstrips (slide films).....	1	209	1	211	4	215
Sound filmstrips (slide films) with records..	29	409	7	445	—	445
Films in Other than English or French	—	8	—	8	76	84

Power Laundries, Dry Cleaning and Dyeing Plants.—In 1966, the combined receipts of laundries and dry cleaning and dyeing plants increased by 11.8 p.c. over the previous year's level, reaching a new high of \$253,311,429. Power laundries reported revenues of \$99,421,169, 10.9 p.c. higher than in 1965, and dry cleaning and dyeing plants reported \$153,890,260, an increase of 12.4 p.c. In total, 2,470 laundries, dry cleaners and dyers employed 35,433 people and paid out \$116,681,656 in salaries and wages. The cost of materials and supplies used in their operations amounted to \$24,990,210, 10.3 p.c. more than in 1965. The upward trends reflected in these statistics provide further evidence of the increasing importance that such "personal service" trades have assumed in the economic life of the nation.

26.—Summary Statistics of Power Laundries and Dry Cleaning and Dyeing Plants, by Source of Receipts and by Province, 1964-66

Item	Power Laundries			Dry Cleaning and Dyeing Plants		
	1964	1965	1966	1964	1965	1966
Plants.....No.	362	352	363	1,826	1,896	2,107
Employees.....No.	13,815	13,767	14,054	18,688	19,887	21,379
Male....."	4,716	4,635	4,681	7,278	7,405	7,751
Female....."	9,099	9,132	9,373	11,410	12,482	13,628
Salaries and wages.....\$	40,919,190	42,213,066	46,350,537	55,395,119	62,380,312	70,331,119
Cost of materials and supplies.....\$	7,799,103	7,397,538	8,054,301	13,774,406	15,253,241	16,935,909
Receipts—						
Laundry.....\$	35,485,041	36,172,076	38,622,581	91,741,137	104,287,317	117,206,153
Cleaning.....\$	12,946,488	13,492,593	13,278,360	19,269,217	22,156,492	24,833,258
Rental services.....\$	32,522,446	35,459,185	42,205,968	7,043,757	5,805,065	755,918
All others.....\$	4,295,205	4,565,954	5,314,260	4,695,420	4,608,372	11,094,931
Totals, Receipts.....\$	85,249,180	89,689,808	99,421,169	122,749,531	136,857,246	153,890,260
By Province—						
Newfoundland.....\$				1,429,551	1,520,183	1,663,287
Prince Edward Island.....\$	575,089	579,323	619,673	434,896	473,300	493,142
Nova Scotia.....\$	1,244,905	1,247,964	1,128,633	4,098,590	4,241,847	4,823,480
Nova Brunswick.....\$	1,437,694	1,538,542	1,973,172	2,330,439	2,413,738	2,657,287
Quebec.....\$	23,079,960	23,384,583	26,906,859	29,439,390	32,614,109	37,991,524
Ontario.....\$	34,524,910	36,701,506	39,647,271	53,271,645	59,645,658	66,255,070
Manitoba.....\$	2,490,678	2,391,104	2,801,549	8,387,985	9,163,208	8,839,353
Saskatchewan.....\$	1,641,605	1,730,285	1,801,564	4,373,962	4,819,508	5,450,998
Alberta.....\$	6,645,440	7,507,408	7,560,050	9,656,661	10,600,637	12,016,450
British Columbia.....\$	13,608,899	14,609,093	16,982,398	9,326,412	11,365,058	13,699,669

¹ Includes the Yukon and Northwest Territories.

Advertising Agencies.—Billings of advertising agencies advanced during 1967 to \$429,595,237, 6.8 p.c. higher than in 1966. Commissionable billings (i.e., for advertising placed in publications, radio, television and other media) increased 7.0 p.c. to \$420,092,360 and billings for production work done by agency staff increased by 14.7 p.c. to \$4,753,410. However, there was a 13.5-p.c. decline in the amount of billings for market surveys, research and other fees. Although gross revenue for all agency business done during 1967 rose to \$72,834,604—8.8 p.c. higher than the 1966 total—net revenue (before deduction of income tax) decreased to \$6,019,603, 8.5 p.c. below the previous year's figure.

27.—Summary Statistics of Advertising Agencies, 1964-67

Item	1964	1965	1966	1967
Firms.....No.	149	159	165	176
Employees.....No.	4,453	4,698	4,973	5,138
Male....."	2,376	2,491	2,574	2,618
Female....."	2,078	2,207	2,399	2,520
Salaries and wages.....\$	33,170,850	37,049,736	40,771,172	44,034,036
Billings.....\$	318,140,339	362,559,347	402,175,869	429,595,237
Commissionable.....\$	311,332,070	354,650,007	392,542,021	420,092,360
Production work.....\$	3,022,557	3,614,697	4,145,388	4,753,410
Market surveys, etc.....\$	3,785,712	4,294,643	5,488,460	4,749,467
Gross revenue.....\$	53,591,932	60,994,714	66,915,185	72,834,604
Commissionable billings.....\$	46,696,607	52,885,006	57,082,209	63,118,282
All other sources.....\$	6,995,325	8,111,708	9,832,976	9,716,322
Net revenue.....\$	4,081,379	5,712,001	6,578,493	6,019,603

Table 28 shows the way in which commissionable billings of advertising agencies were distributed among the various media during 1964-67. Although radio's share remained more or less constant over this period, the amount devoted to television advertising increased from 26.7 p.c. to 29.1 p.c. At the same time, billings for advertising in publications declined from 40.4 p.c. to 37.2 p.c. and for other visual advertising forms from 3.9 p.c. to 3.5 p.c.

28.—Percentage Distribution of Commissionable Billings, by Medium, 1964-67

Medium	1964	1965	1966	1967
	p.c.	p.c.	p.c.	p.c.
Publications.....	40.4	39.5	38.8	37.2
Television.....	26.7	27.4	27.8	29.1
Other visual, incl. billboards and signs.....	3.9	3.7	3.4	3.5
Radio.....	10.5	10.4	10.5	11.3
Production, artwork, etc.....	18.4	18.9	19.5	18.5
Other.....	0.1	0.1	--	0.4

Credit Statistics

Sales Financing.—During 1967, for the second consecutive year, the value of new financial paper purchased by Canadian sales finance companies declined. The \$1,457,000,000 of new paper purchases (the lowest amount recorded since 1963) was 4.5 p.c. below the previous year's total. The decline was felt mainly in the consumer goods field—the result of a drop of \$67,000,000 or 7.7 p.c. in new paper purchases on new and used passenger cars. In the commercial and industrial goods field, new paper purchased on new and used commercial vehicles was very slightly ahead of the 1966 figure but for non-vehicular commercial goods purchases declined by 3.0 p.c.

As might be anticipated following two successive years of declines in the rate of acquisition of new financial paper, the outstanding balances of sales finance companies fell for the first time in several years. The drop of \$115,000,000 in balances outstanding from Dec. 31, 1966 to Dec. 31, 1967, represented a loss of 6.2 p.c., which was fairly evenly divided between consumer goods (–6.7 p.c.) and commercial and industrial goods (–5.4 p.c.). The major impact was felt in the balances outstanding on new and used passenger cars which were down 7.7 p.c., and on new and used commercial vehicles which declined 7.5 p.c.

29.—Sales Finance Company New Paper Purchased and Balances Outstanding, by Class of Goods, 1963-67

(Millions of dollars)

Class of Goods	Paper Purchased					Balances Outstanding Dec. 31—				
	1963	1964	1965	1966	1967	1963	1964	1965	1966	1967
Consumer Goods	925	1,029	1,068	1,058	995	874	1,035	1,131	1,184	1,105
New passenger cars.....	442	511	563	570	530	687	809	901	949	876
Used passenger cars.....	288	319	313	298	271					
Radio and television sets, household appliances, furniture and other.....	195	199	192	190	194					
Commercial and Industrial	420	478	509	468	462	519	588	665	668	632
New commercial vehicles.....	108	123	129	147	149	170	197	216	254	235
Used commercial vehicles.....	51	51	51	51	51					
Other.....	261	303	328	270	262					
Totals¹	1,345	1,507	1,577	1,526	1,457	1,393	1,624	1,796	1,852	1,737

¹ Totals are not the exact addition of the components because of rounding of the figures.

Consumer Credit.—Total balances outstanding on credit extended to consumers by retail stores and selected financial institutions have increased rapidly during the past decade, surpassing the \$8,300,000,000-mark by the end of 1967 and reaching an estimated \$9,500,000,000 at Dec. 31, 1968. From 1959 to 1968, consumer credit outstanding (calculated as at Dec. 31 in all cases) has nearly tripled, with most of the growth heavily concentrated in the chartered banks, consumer loan companies and credit unions. The data in Table 30 do not include consumer credit extended by investment, trust, mortgage, leasing and rental companies, nor do they include various forms of service and personal credit on which no detailed information is available.

30.—Consumer Credit Balances Outstanding, by Selected Holders, 1959-68

(Millions of dollars)

Year	Retail Trade Credit	Sales Finance Companies ¹	Consumer Loan Companies	Life Insurance Companies Policy Loans	Chartered Banks ²	Credit Unions and Caisses Populaires	Other Credit Holders ³	Total
1959.....	916	806	484	323	719	397	46	3,691
1960.....	960	828	549	344	857	433	49	4,020
1961.....	1,005	756	594	358	1,030	451	56	4,250
1962.....	1,039	801	714	372	1,183	523	62	4,694
1963.....	1,088	874	810	385	1,432	615	67	5,270
1964.....	1,147	1,035	904	398	1,793	705	74	6,056
1965.....	1,216	1,131	1,043	411	2,241	813	88	6,943
1966.....	1,260	1,184	1,163	450	2,458	937	104	7,556
1967.....	1,286	1,105	1,303	486	2,977	1,094	121	8,372
1968.....	1,329	1,173	1,464	542	3,665	1,247	152	9,572

¹ Credit on consumer goods only.² Includes personal loans other than secured loans, home improvement loans and mortgages.³ Includes Quebec savings banks loans and oil company credit card balances.

Retail Credit.—During 1968 there was continued growth in the value of accounts outstanding on the books of Canadian retailers, who held \$1,458,600,000 in retail credit as at Dec. 31, an amount 3.8 p.c. higher than at the end of the immediately preceding year and 55.6 p.c. higher than 10 years earlier. Of the total credit outstanding at year-end 1968, more than two thirds was accounted for by department stores, furniture, television, radio and appliance stores, and motor vehicle dealers.

31.—Retail Credit, 1959-68, and by Kind of Business, 1968

Year	Accounts Receivable (at end of period)	Kind of Business	Accounts Receivable (at end of period)		
			Instal- ment	Charge	Total
	\$'000,000		\$'000,000	\$'000,000	\$'000,000
		1968			
		Grocery and combination stores ¹.....	..	..	38.3
		Department stores.....	..	..	631.9
		General stores.....	..	..	43.4
1959.....	992.5	Motor vehicle dealers ²	16.2	130.4	146.6
1960.....	1,037.6	Service stations and garages.....	..	..	36.6
1961.....	1,088.2	Men's clothing stores.....	11.3	17.7	29.0
1962.....	1,125.1	Women's clothing stores.....	5.2	14.2	19.4
1963.....	1,182.8	Family clothing stores.....	13.9	15.3	29.2
1964.....	1,242.6	Hardware stores.....	7.4	37.5	44.9
1965.....	1,323.8	Furniture, TV, radio and appliance stores.....	172.9	38.5	211.4
1966.....	1,373.5	Fuel dealers.....	4.9	71.0	75.9
1967.....	1,404.7	Jewellery stores.....	17.5	13.1	30.6
1968.....	1,458.6	All other stores.....	38.1	83.3	121.4
		Totals, All Trades.....	..	..	1,458.6

¹ Independent stores only.² The charge accounts of motor vehicle dealers are not normally included as "consumer" credit (Table 30) since they are extended mainly to businesses rather than to consumers.

Section 2.—The Marketing of Agricultural Products*

Subsection 1.—The Grain Trade, 1966-67

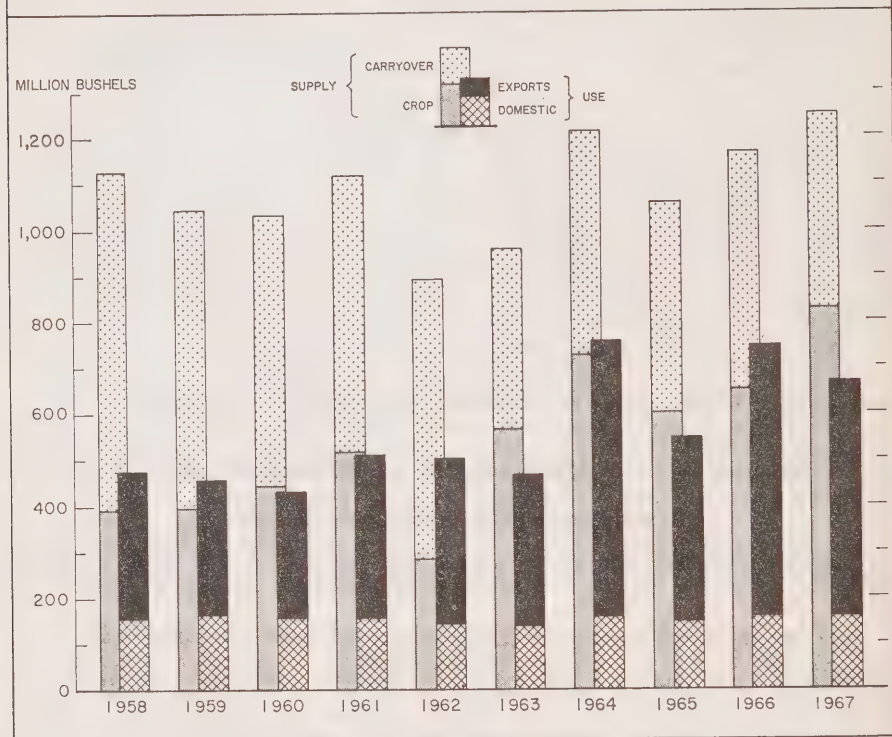
Estimated domestic supplies of wheat, oats, barley, rye and flaxseed totalled 2,209,400,000 bu. in the crop year 1966-67, an increase of 7 p.c. over the total of 2,062,400,000 bu. in 1965-66.

Marketings of the six major grains (including rapeseed) in the Prairie Provinces during the 1966-67 crop year amounted to 835,400,000 bu., an increase of 9 p.c. over the 1965-66 level of 769,500,000 bu. and 42 p.c. over the ten-year (1955-56—1964-65) average of 587,600,000 bu. Deliveries of wheat, barley and rapeseed were larger than those of the previous crop year and those of oats, rye and flaxseed were smaller. Marketings of wheat at 632,400,000 bu. were up 11 p.c. and accounted for 76 p.c. of the total deliveries. Marketings of the other major grains, with totals for 1965-66 and the ten-year averages, respectively, in brackets and in millions of bushels, were as follows: oats, 38.4 (51.7, 50.8); barley, 112.7 (93.9, 96.5); rye, 11.0 (12.1, 6.7); flaxseed, 20.1 (23.7, 16.9); and rapeseed, 20.8 (18.8, 7.2).

As in the preceding year, an initial Western grain delivery quota of 100 units was in effect at local delivery points at the beginning of the marketing year: permit holders were entitled to deliver a maximum of 400 bu. of wheat or 1,000 bu. of oats or 600 bu. of barley or 600 bu. of rye or any combination of these grains which, when calculated on a unit basis, did not exceed 100. The initial unit quota was followed by general quotas based on bushels per specified acre; specified acreage consisted of each permit holder's acreage seeded to wheat (including Durum), oats, barley and rye, the summerfallow acreage and the acreage seeded to eligible grasses and forage crops. The crop year commenced with the initial quotas in effect at all delivery points. The first general quotas, established Sept. 5, 1966, were extended and increased as local country elevator space became available. For flaxseed and rapeseed, a delivery quota of 5 bu. per acre seeded or 250 bu. whichever was larger, was established Aug. 22, 1966, increased to 8 bu. per seeded acre or 400 bu. on Nov. 23, to the larger of 12 bu. per seeded acre or 600 bu. on

* Prepared in the Agriculture Division, Dominion Bureau of Statistics.

SUPPLY AND DISPOSITION OF CANADIAN WHEAT CROP YEARS ENDED JULY 31, 1958-67



Jan. 27, 1967, and declared open for the remainder of the crop year on Mar. 31. The general quota applied to rye until Mar. 31, 1967, when the quota was declared open for the remainder of the crop year.

Stocks of the six principal grains in store at both country and terminal elevators on Aug. 1, 1966, at 441,100,000 bu., were some 69,200,000 bu. lower than on the same date of 1965. The volume of high-moisture grain that required conditioning was lower than in the 1965-66 crop year. However, to assist producers who were holding stocks of high-moisture grain, the Canadian Wheat Board authorized, on Nov. 28, an advance delivery privilege on wheat, oats, barley and rye, having a moisture content of 15.7 p.c. and over, up to 4 bu. per specified acre in excess of established quotas, provided that such deliveries, when added to deliveries already made under authorized specified acreage quotas, did not exceed 8 bu. per specified acre. Heavy export commitments for wheat necessitated the movement of large volumes of grain to and from country elevators during the August-December period and this large shipping program enabled the Board to advance quotas. By the end of the first half of the crop year most delivery points were on a quota of 4, 5 or 6 bu. per specified acre. In early 1967 it became necessary to ensure that sufficient supplies were available in country elevators for forwarding to terminal positions to meet sales commitments. To avoid filling commercial grain handling facilities

with grain not immediately required, a supplementary quota of 5 bu. per acre seeded was authorized, first effective on Apr. 3. Shipments from country elevators continued in large volume from the opening of navigation in the spring of 1967 to the end of the crop year. By June 12, the specified acreage quota at all delivery points had been increased to 8 bu., and by July 20 the supplementary wheat quota was in effect at all stations.

Wheat.—Domestic supplies of wheat in 1966-67 were at an all-time high of 1,247,500,000 bu., 7 p.c. above the 1965-66 total of 1,162,400,000 bu. and 3 p.c. above the previous record supply of 1,210,700,000 bu. in 1963-64. The 1966 production of wheat, at \$27,300,000 bu., was higher than the 1965 output of 649,400,000 bu. but carryover stocks of 420,100,000 bu. were down from the 1965 carryover of 513,000,000 bu. Exports of wheat and flour in terms of wheat, at 515,300,000 bu., were 12 p.c. below the 584,900,000 bu. exported in the previous year but surpassed by wide margins both the ten-year average of 350,600,000 bu. and the long-term average of 283,400,000 bu.

During the crop year 1966-67, marketing of Western Canadian wheat was again conducted by the Canadian Wheat Board on a one-year Pool basis, with the initial payment being \$1.50 per bu. No. 1 Northern, basis in store Fort William-Port Arthur or Vancouver. There were no adjustment or interim payments on the 1966-67 Wheat Pool, but on Mar. 27, 1968, the final payment was announced. Producers delivered 626,500,000 bu. including 23,600,000 bu. of Durum. The amount of the final payment distributed to producers was \$315,000,000, of which \$14,900,000 was distributed to producers of Durum. After deducting the Prairie Farm Assistance Act levy, the average final payment on spring wheat (other than Durum) was 49.759 cents per bu. and the average final payment on Durum grades was 63.323 cents per bu. The total payment for No. 1 Northern, basis in store Fort William-Port Arthur or Vancouver and prior to deduction of the PFAA levy, amounted to \$1.98709 per bu.

Sales in 1966-67 under the International Wheat Agreement continued to be quite widely distributed, with 30 of the 40 importing countries included in the pact purchasing wheat and/or flour from Canada. Under the terms of the Agreement, purchases of Canadian wheat and flour amounted to the equivalent of 206,800,000 bu. during 1966-67 and accounted for 28 p.c. of total sales under the Agreement. Britain was the leading IWA market. Shipments to that country amounted to some 73,100,000 bu. and shipments to other major importers were as follows, in millions of bushels: Japan, 60.2; India, 43.6; Federal Republic of Germany, 22.6; Cuba, 19.5; Belgium and Luxembourg, 13.9; Republic of South Africa, 9.4; Venezuela, 5.0; and Switzerland, 4.9. In 1966-67, the leading markets for Class II wheat and wheat flour were, in millions of bushels: the Soviet Union, 93.2; Communist China, 90.5; Poland, 13.8; Italy, 9.5; Pakistan, 7.6; East Germany, 4.5; Czechoslovakia, 4.2; and Bulgaria 3.8.

Other Grains.—The supply and disposition of the major Canadian grains for the crop years 1965-66 and 1966-67 are shown in Table 32. During the 1966-67 crop year, initial payments for oats basis No. 2 C.W. in store Fort William-Port Arthur, and barley basis No. 3 C.W. Six-Row in store Fort William-Port Arthur, were 60 cents per bu. and 46 cents per bu., respectively, the same as in 1965-66; no interim payments were made on either grain.

The surplus of oats for distribution, announced Mar. 12, 1968, amounted to \$8,402,616 and, based on 35,104,357 bu. delivered to the 1966-67 Pool, averaged 23.9361 cents per bu. after deducting the 1-p.c. PFAA levy. The final payment on barley, also announced Mar. 12, was based on deliveries of 106,155,792 bu. and amounted to \$35,798,202, averaging 33.7223 cents per bu. after deducting the 1-p.c. PFAA levy. Total prices realized by producers for representative grades, prior to the PFAA levy, were: No. 2 C.W. oats, \$0.83445 per bu.; No. 1 Feed oats, \$0.79536 per bu.; No. 3 C.W. Six-Row barley, \$1.29399 per bu.; and No. 1 Feed barley, \$1.20839 per bu.

Combined exports of oats, barley, rye, flaxseed and rapeseed (including Customs exports of seed oats, oatmeal and rolled oats, malt, rye flour and meal in terms of grain

equivalent) amounted to 103,700,000 bu. in 1966-67, 10 p.c. above the 1965-66 level of 94,600,000 bu. and 12 p.c. above the ten-year (1955-56—1964-65) average of 92,800,000 bu. Barley, rye and rapeseed exports were higher in 1966-67 than in 1965-66 and those of oats and flaxseed were lower.

Exports of oats in bulk amounted to 2,800,000 bu. in 1966-67 in contrast to the 15,300,000 bu. shipped in the previous year. The major markets were the Netherlands with 1,500,000 bu. and the United States with 1,400,000 bu., compared with 4,900,000 bu., and 1,100,000 bu., respectively, in 1965-66. Other shipments, ranging from 100,000 bu. to 300,000 bu., went to Britain, Switzerland, Belgium and Luxembourg, Ireland and Syria. Exports of Canadian oatmeal and rolled oats amounted to the equivalent of 287,000 bu. compared with 401,000 bu. the year before.

Barley exports were the highest since 1959-60; at 53,100,000 bu., they represented a sharp increase over the 33,700,000 bu. exported in 1965-66. Shipments to several traditional customers reflected increases over 1965-66 levels and were as follows, with totals for the previous year in brackets, in millions of bushels: Italy, 12.2 (11.9); Japan, 10.5 (6.1); Britain, 9.3 (4.7); United States, 7.4 (4.7); Spain, 2.9 (nil); Federal Republic of Germany, 2.3 (1.5); Netherlands, 1.3 (0.3); Austria, 1.2 (0.7); and Norway, 1.0 (0.6). Shipments of malt were the equivalent of 5,400,000 bu. of barley, 26 p.c. above the 1965-66 figure of 4,300,000 bu. They went to 25 destinations, the major markets being, in millions of bu.: United States, 1.0; Britain, 0.8; Philippines, 0.6; Peru, 0.5; Venezuela, 0.5; and Brazil and Japan, 0.4 each.

32.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1966 and 1967 (Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed
Crop Year 1965-66¹					
Carryover, Aug. 1, 1965.....	513.0	130.1	88.8	8.5	7.1
Production in 1965.....	649.4	400.0	218.3	17.8	29.2
Imports ²	2	2	0.1	2	2
Totals, Supply.....	1,162.4	530.1	307.2	26.4	36.3
Exports ³	584.9	15.9	38.0	8.1	18.9
Domestic use ⁴	157.4	387.0	171.4	7.7	6.2
Totals, Disposition.....	742.3	402.9	209.4	15.8	25.3
Carryover, July 31, 1966.....	420.1	127.2	97.8	10.6	11.1
Crop Year 1966-67					
Carryover, Aug. 1, 1966.....	420.1	127.2	97.8	10.6	11.1
Production in 1966.....	827.3	374.7	301.2	17.2	22.0
Imports ²	2	2	0.1	2	2
Totals, Supply.....	1,247.5	501.8	399.1	27.8	33.2
Exports ³	515.3	4.8	58.5	10.0	16.6
Domestic use ⁴	155.4	387.3	208.8	9.5	4.8
Totals, Disposition.....	670.7	392.1	267.3	19.5	21.3
Carryover, July 31, 1967.....	576.8	109.8	131.8	8.3	11.8

¹ Includes flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour in terms of rye. ² Fewer than 50,000 bu. ³ Includes seed wheat, wheat flour in terms of wheat, seed oats, rolled oats and oatmeal in terms of oats, malt in terms of barley, and rye flour and meal in terms of rye. ⁴ Includes human food, seed requirements, industrial use, loss in handling and animal feed.

In 1966-67, exports of rye, at 10,000,000 bu., were only slightly below the all-time record of 12,900,000 bu. shipped in 1955-56. The principal markets, in millions of bushels, were: Japan, 4.3; United States, 1.6; Norway, 1.5; and the Netherlands, 1.0.

Clearances of Canadian flaxseed during 1966-67 amounted to 16,600,000 bu., 13 p.c. below the 18,900,000 bu. of the previous year. The leading markets were Japan with imports of 4,700,000 bu., the Netherlands with 4,100,000 bu., and Britain with 3,500,000 bu. Exports of linseed oil were equivalent to about 500,000 bu. of flaxseed, most of which went to Britain. Trade in rapeseed during 1966-67 amounted to a record 13,800,000 bu., slightly above the previous year; major markets, in millions of bushels, were: Japan, 8.4; Italy, 3.2; and the Netherlands, 1.0. Mustard seed exports, at 2,400,000 bu., were above the 1965-66 level of 1,800,000 bu. and went mainly to the United States, the Netherlands, Japan, and Belgium and Luxembourg.

33.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1963-67

(Millions of bushels)

Item	1961-62	1962-63	1963-64	1964-65	1965-66 ¹	1966-67
Carryover, Aug. 1.....	607.8	391.1	487.2	459.4	513.0	420.1
Production.....	283.4	565.6	723.4	600.4	649.4	827.3
Imports.....	1	1	1	1	1	1
Totals, Supply.....	891.2	956.6	1,210.7	1,059.9	1,162.4	1,247.5
Exports ²	358.0	331.2	594.5	399.6	584.9	515.3
Domestic use.....	142.2	138.1	156.7	147.3	157.4	155.4
Totals, Disposition.....	500.2	469.4	751.3	546.9	742.3	670.7
Carryover, July 31.....	391.1	487.2	459.4	513.0	420.1	576.8

¹ Fewer than 50,000 bu.

² Includes seed wheat and wheat flour in terms of wheat.

Miscellaneous Grain Trade Statistics

Grain Handled at Eastern Elevators.—Total receipts of the five major grains at eastern elevators in the 1966-67 crop year amounted to 489,674,000 bu., 6 p.c. less than in the previous crop year. Shipments, amounting to 467,294,000 bu., were down 14 p.c. from the 1965-66 level of 544,298,000 bu.

34.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1963-67

NOTE.—Figures for the crop years ended 1922-62 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.
Receipts—						
1962-63.....	244,953,613	30,096,077	21,431,674	3,692,938	7,786,039	307,960,341
1963-64.....	425,500,798	34,575,280	31,431,415	2,726,233	7,301,269	501,534,995
1964-65.....	332,054,894	34,679,472	26,523,625	1,846,451	5,911,068	401,015,510
1965-66.....	440,515,042	36,369,468	36,727,865	3,590,874	6,341,684	523,544,933
1966-67.....	402,638,556	34,803,584	42,994,922	3,627,532	5,609,823	489,674,417
Shipments—						
1962-63.....	229,459,107	29,294,945	21,984,624	3,432,627	7,639,856	291,811,159
1963-64.....	474,419,208	35,481,811	31,076,245	2,658,662	7,260,962	550,896,888
1964-65.....	292,152,053	33,899,769	26,520,419	1,641,910	6,174,167	360,388,327
1965-66.....	464,113,311	35,130,369	35,506,689	3,489,923	6,057,491	544,297,783
1966-67.....	379,129,920	35,713,589	43,463,558	3,688,086	5,298,936	467,294,089

Lake Shipments of Grain.—The 1967 navigation season opened at the Canadian Lakehead on Apr. 13 and closed on Dec. 20. During the season, shipments of wheat, oats, barley, rye, flaxseed, rapeseed and buckwheat totalled 361,097,000 bu., a 27-p.c. decrease from the 494,591,000 bu. shipped during the 1966 navigation season which opened on Apr. 3 and closed on Dec. 20.

35.—Lake Shipments of Canadian Grain from Fort William-Port Arthur, Navigation Seasons 1966 and 1967

Grain	1966				1967			
	To Canadian Ports	To U.S. Ports	To Overseas Ports	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Ports	Total Shipments
Wheat.....bu.	386,769,523	736,827	4,860,187	392,366,537	225,936,536	—	12,991,859	238,928,395
Oats.....“	30,759,970	119,515	2,224,934	33,104,419	35,583,537	—	1,585,208	37,168,745
Barley.....“	36,131,770	4,898,866	3,979,049	45,009,685	50,470,765	5,759,312	11,563,401	67,793,478
Rye.....“	4,101,206	2,031,417	2,379,176	8,511,799	3,084,295	923,596	1,496,895	5,504,786
Flaxseed.....“	6,035,327	—	8,222,572	14,257,899	5,607,163	—	5,062,332	10,669,495
Rapeseed.....“	253,829	—	995,683	1,249,512	322,341	—	606,581	928,922
Buckwheat.....“	—	—	91,358	91,358	—	—	103,540	103,540
Totals....bu.	464,051,625	7,786,625	22,752,959	494,591,209	321,004,637	6,682,908	33,409,816	361,097,361
Sunflower seed, bu.	—	—	39,379	39,379	—	—	—	—
Mustard seed...“	—	—	130,297	130,297	—	—	—	—
Screenings.....ton	93,197	—	103,565	196,762	—	—	149,230	149,230

Production and Exports of Wheat Flour.—Production of wheat flour in the 1966-67 crop year amounted to 39,979,000 cwt. and wheat milled for flour totalled 90,085,000 bu., each representing a decrease of 8 p.c. from the previous year. Of the wheat milled for flour, approximately 77,017,000 bu. were Western Canadian spring wheat (other than Durum) and the remainder was made up of 8,263,000 bu. of Ontario winter wheat, 3,659,000 bu. of Durum wheat and 1,145,000 bu. of other types. Utilization of milling capacity, based on a daily operating potential of some 173,000 cwt., averaged 78.8 p.c. compared with 85.4 p.c. in the previous year. Exports of wheat flour in 1966-67 amounted to 13,848,000 cwt., some 16 p.c. less than the 16,576,000 cwt. exported in 1965-66.

36.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Average 1940-60 and Crop Years Ended July 31, 1961-67

Crop Year (Aug. 1—July 31)	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1940-41 — 1944-45.....	99,705	43,908,245	23,609,546	54.0
Av. 1945-46 — 1949-50.....	107,330	47,011,540	25,819,721	54.9
Av. 1950-51 — 1954-55.....	100,446	43,847,894	21,812,041	49.7
Av. 1955-56 — 1959-60.....	90,148	39,752,589	16,349,155	41.1
1960-61.....	89,731	39,914,644	15,513,836	38.9
1961-62.....	88,241	39,539,651	13,892,676	35.1
1962-63.....	78,789	35,505,220	11,854,458	33.4
1963-64.....	111,671	50,103,569	23,873,987	47.6
1964-65.....	87,209	39,107,358	13,714,069	35.1
1965-66.....	97,926	43,531,263	16,576,117	38.1
1966-67.....	90,085	39,978,571	13,848,208	34.6

Subsection 2.—Livestock Marketings*

All classes of livestock, except cattle, had higher marketings in 1967 than in 1966. The total output of cattle to public stockyards, direct to packing plants and on export fell short of the previous year by about 6 p.c., amounting to 3,270,880 head. The reduction in marketings was attributable mainly to a sharp drop in direct exports and to curtailed sales for export off public stockyards. Only in two previous years (1956 and 1966), however, were the 1967 marketings exceeded, and then not by a wide margin. All provinces shared in the output decline. Throughout the year there was a strong demand for replacement cattle. The inward movement of 573,573 cattle and 469,870 stock calves was the heaviest ever returned to the country for further feeding. The dressed weight of cattle slaughtered in inspected packing plants was higher than for each comparative month in 1966. Average carcass weight was 550.1 lb., about 5 lb. over the previous year; the heavier weight reflected an expanded cattle feeding program and continued improvement in carcass quality. A record 55.0 p.c. of the inspected slaughtering was in choice and good grades, compared with 51.6 p.c. in 1966. The per head value of all cattle marketed rose about \$13 from 1966 but the reduction in marketings resulted in a lower income at \$735,400,000. Increased calf marketings and higher prices resulted in a record income of \$121,800,000 for this class.

* More detailed information is available from DBS annual report *Livestock and Animal Products Statistics* (Catalogue No. 23-203), and the Canada Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry production and disappearance are given on pp. 494-499.

37.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1963-67

Livestock	1963	1964	1965 ¹	1966	1967
	No.	No.	No.	No.	No.
Cattle	2,567,475	2,869,834	3,412,043	3,318,109	3,199,171
Steers— ²					
Choice.....	649,731	720,513	716,082	760,416	746,825
Good.....	273,428	313,813	292,940	308,920	331,212
Medium.....	155,543	172,691	208,793	173,325	180,448
Common.....	51,916	74,095	93,732	54,720	51,924
Heifers— ²					
Choice.....	113,706	137,161	167,166	195,352	215,474
Good.....	103,383	131,006	169,994	183,809	188,171
Medium.....	107,274	115,452	160,974	141,468	136,145
Common.....	50,095	59,495	90,286	62,514	54,969
Cows.....	590,797	629,904	845,352	823,093	708,869
Bulls.....	60,754	65,486	78,977	67,808	60,758
Feeder steers.....	323,417	355,879	435,847	393,315	376,611
Stock and feeder cows and heifers.....	87,431	94,339	151,900	153,379	147,765
Calves	916,068	983,616	1,182,623	1,106,616	1,109,565
Choice and Good—					
Veal.....	202,602	223,489	208,543	232,991	193,650
Butcher ³.....	..	..	53,466	40,870	45,382
Medium and Common—					
All weights ⁴	461,067	497,608	565,252	442,623	472,240
Stock.....	252,399	262,519	355,362	390,132	398,293
Hog Carcass Gradings	6,520,828	7,281,644	7,077,126	6,860,030	8,186,356
"A".....	2,384,686	2,726,771	2,814,675	2,792,351	3,331,351
"B".....	2,882,431	3,200,876	3,065,538	2,917,008	3,434,215
"C".....	494,985	536,625	469,325	425,598	508,853
"D".....	37,159	38,541	35,406	26,024	34,076
Light.....	135,400	160,744	154,264	112,744	150,702
Heavy.....	227,475	220,359	199,619	257,791	300,621
Extra heavy.....	78,938	78,574	67,321	81,811	100,241
"E".....	45,452	51,818	50,084	49,085	58,137
Sows.....	234,302	267,336	220,894	197,618	268,160
Lambs and Sheep Graded Alive	64,419	57,663	59,248	53,573	73,695
Lamb and Sheep Carcass Gradings	450,501	436,490	359,328	285,774	275,076

¹ Includes Newfoundland for the first time.² Fed calves discontinued Jan. 1, 1965; included with steers and heifers.³ Butcher calves not reported separately before 1965.⁴ Grass calves discontinued Jan. 1, 1965; included with Medium and Common, All weights.⁵ Includes injured hogs, ridglings and stags.

The shipment of hogs to inspected and approved packing plants in 1967 was the highest since 1959 and the third highest on record; marketings numbered 8,186,356, or 19.3 p.c. above those of 1966. All provinces participated in the increase but the principal gains were made in the western provinces. The average weight of hog carcasses was 162.0 lb., slightly higher than the 161.5 lb. of a year earlier. For the first time in several years the percentage of grade A hogs declined in several provinces but the percentage for Canada as a whole, excluding sows and stags, was 42.2 compared with 42.0 in 1966. The per head value declined about \$9 but the sharp increase in commercial marketings brought the value to an all-time high of \$373,800,000.

38.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1967

Livestock	Atlantic Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Cattle	40,429	110,813	919,802	335,059	669,151	1,182,431	77,129	3,334,814
Totals to stockyards....	2,368	56,794	426,896	201,914	357,125	557,854	9,600	1,612,551
Direct to packers.....	33,292	51,227	465,141	125,970	245,381	610,954	54,655	1,586,620
Direct for export.....	4,720	2,792	27,765	1,966	29,781	1,609	3,076	71,709
Country points in other provinces ¹	49	—	—	5,209	36,864	12,014	9,798	63,934
Calves	16,804	382,204	235,517	165,323	306,349	241,705	26,710	1,374,612
Totals to stockyards....	4,497	82,088	93,807	130,529	175,499	161,701	3,513	661,634
Direct to packers.....	8,366	251,008	119,458	21,548	15,590	33,144	8,817	457,931
Direct for export.....	3,910	49,108	22,252	5,690	9,004	98	777	90,839
Country points in other provinces ¹	31	—	—	7,556	106,256	46,762	13,603	174,208
Hogs	285,651	2,003,669	2,937,341	765,869	595,346	1,563,504	48,400	8,202,780
Totals to stockyards....	—	7,964	509,162	211,033	34,908	74,532	125	837,724
Direct to packers.....	285,239	1,995,634	2,420,574	547,489	563,105	1,488,324	48,267	7,348,632
Direct for export.....	412	71	7,605	7,347	333	648	8	16,424
Sheep and Lambs	14,985	35,917	114,687	22,610	43,149	131,376	21,810	384,534
Totals to stockyards....	972	4,785	70,951	9,588	13,462	25,529	725	126,012
Direct to packers.....	13,959	31,132	43,406	12,374	21,960	79,556	20,372	222,759
Direct for export.....	4	—	330	6	48	12,115	19	12,522
Country points in other provinces ¹	50	—	—	642	7,679	14,176	694	23,241
Total Inward Movement — ²								
Cattle.....	225	1,885	218,450	41,481	81,022	229,086	1,424	573,573
Calves.....	102	1,318	324,558	4,195	20,152	118,274	1,271	469,970
Sheep and lambs.....	—	1,590	27,120	1,452	1,206	11,001	—	42,369

¹ Livestock billed through stockyards to country points outside province of origin.

² Movement to farms from stockyards and plants, and shipments on through-billings from country points in one province to country points in another province.

Section 3.—Storage and Warehousing

This Section carries data on licensed grain storage and the public warehousing industry only. Information on other types of storage may be obtained from the following sources: cold storage and storage of food—Economics Branch of the Canada Department of Agriculture; storage of petroleum and petroleum products—Energy Statistics Section of the Manufacturing and Primary Industries Division, DBS; customs warehouses—Port Administration Branch of the Department of National Revenue.

Licensed Grain Storage.—Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 679,828,000 bu. at Dec. 1, 1966, the increase over the same date of 1965 being 2,629,000 bu. Greater capacity in western country elevators and lower St. Lawrence

ports more than offset decreases in interior private and mill, interior terminals and lower Lake and upper St. Lawrence ports. The movement of grain in and out of storage during 1966-67 is discussed at p. 941. Table 39 gives the amount in storage at three dates during the year. On July 31, 1967, 65.3 p.c. of the licensed storage capacity was occupied as compared with 57.9 p.c. on the same date of 1966.

39.—Licensed Grain Storage Capacity and Grain in Store, Crop Years 1965-66 and 1966-67

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain ¹ in Licensed Storage				Proportion of Licensed Storage Capacity Occupied		
	Dec. 1, 1965	Dec. 1, 1965	Mar. 30, 1966	July 31, 1966	Dec. 1, 1965	Mar. 30, 1966	July 31, 1966	
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
1965-66								
Western country.....	382,853	246,444	245,346	251,367	64.4	64.1	65.7	
Interior private and mill.....	17,743	6,626	7,803	8,012	37.3	44.0	45.2	
Interior terminals.....	18,100	5,106	4,114	3,719	28.2	22.7	20.5	
Pacific Coast.....	24,846	12,562	14,629	15,327	50.6	58.9	61.7	
Churchill.....	5,000	739	829	4,137	14.8	16.6	82.7	
Fort William-Port Arthur.....	106,321	39,386	84,090	61,748	37.0	79.1	58.1	
Georgian Bay and upper Lake ports.....	36,566	26,210	6,211	8,486	71.7	17.0	23.2	
Lower Lake and upper St. Lawrence ports.....	20,100	9,717	5,574	7,801	48.3	27.7	38.8	
Lower St. Lawrence ports.....	58,440	33,818	14,501	29,044	57.9	24.8	49.7	
Maritime ports (excl. Newfoundland).....	7,229	5,300	2,011	2,226	73.3	27.8	30.8	
Totals, 1965-66.....	677,199	385,908	385,108	391,867	57.0	56.9	57.9	
	Dec. 1, 1966	Nov. 30, 1966	Mar. 29, 1967	July 31, 1967	Nov. 30, 1966	Mar. 29, 1967	July 31, 1967	
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
1966-67								
Western country.....	388,332	240,829	247,600	265,812	62.0	63.8	68.4	
Interior private and mill.....	15,863	7,101	7,284	8,064	44.8	45.9	50.8	
Interior terminals.....	17,100	4,795	13,577	15,911	28.0	79.4	93.0	
Pacific Coast.....	24,846	16,957	14,546	14,304	68.2	58.5	57.6	
Churchill.....	5,000	948	948	4,482	19.0	19.0	89.6	
Fort William-Port Arthur.....	106,321	41,260	90,752	65,336	38.8	85.4	61.5	
Georgian Bay and upper Lake ports.....	36,566	27,176	9,253	26,316	74.3	25.3	72.0	
Lower Lake and upper St. Lawrence ports.....	19,100	10,333	6,556	9,655	54.1	34.3	50.5	
Lower St. Lawrence ports.....	59,470	40,349	18,657	29,750	67.8	31.4	50.0	
Maritime ports (excl. Newfoundland).....	7,229	6,412	2,884	4,205	88.7	39.9	58.2	
Totals, 1966-67.....	679,828	396,160	412,057	443,835	58.3	60.6	65.3	

¹ Wheat, oats, barley, rye, flaxseed and rapeseed.

The Public Warehousing Industry

The summary statistics of the warehousing industry presented in Table 40 cover the operations of the majority of firms offering general merchandise and refrigerated storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.

40.—Summary Statistics of Warehousing of General Merchandise and Refrigerated Goods, 1963-67

Item	1963	1964	1965	1966	1967
Companies reporting..... No.	138	152	152	145	143
Investment in land, warehouses, etc..... \$	83,930,051	90,680,374	91,210,700	97,682,008	105,982,252
Warehousing Facilities—					
General merchandise..... cu.ft.	77,108,607	83,047,067	86,493,705	79,915,420	117,609,746
Refrigerated goods..... "	45,259,631	44,620,942	44,058,489	40,241,832	47,525,456
Revenue—					
Storage..... \$	20,883,783	22,471,734	22,102,879	25,548,617	31,882,295
Cartage and moving..... \$	6,428,081	9,113,060	10,519,532	11,744,728	13,569,725
Miscellaneous..... \$	9,394,843	10,845,159	12,434,851	14,078,774	16,533,512
Total Revenue..... \$	36,706,707	42,429,953	45,057,262	51,372,119	61,985,532
Operating expenses..... \$	33,679,586	39,657,425	42,470,941	47,180,708	57,013,691
Net Operating Revenue..... \$	3,027,121	2,772,528	2,586,321	4,191,411	4,971,841
Employees, average..... No.	4,033	4,403	4,679	4,625	5,012
Salaries and wages..... \$	17,279,113	20,034,223	21,501,114	23,470,574	27,743,777
Motor Vehicles—					
Trucks..... No.	602	652	671	692	702
Tractors..... "	130	165	166	196	208
Trailers and semi-trailers..... "	158	253	296	311	425

¹ Includes storage space for household goods amounting to 900,000 cu. ft. in 1963; 1,047,090 cu. ft. in 1964; 969,586 cu. ft. in 1965; 1,037,370 cu. ft. in 1966; and 1,215,270 cu. ft. in 1967.

Section 4.—Co-operative Organizations*

The volume of business in 1967 for 2,517 local co-operatives amounted to \$2,179,000,000, an increase of \$219,000,000 or 11 p.c. over the previous year, and consisting of farm product marketings \$1,418,000,000, sale of merchandise and supplies \$686,000,000, service revenue (trucking, cold storage, grazing, etc.) \$61,000,000 and miscellaneous income (rent, interest, dividends, etc.) \$14,000,000. Assets totalled \$1,000,000,000 of which members' equity represented 47 p.c. Membership at 1,700,000 was up slightly from that of the previous year. Marketing and purchasing co-operatives, which market members' produce and retail merchandise and supplies to members, have been for many years the dominant group and in 1967 were responsible for 95 p.c. of the total business volume. Service and fishermen's co-operatives accounted for the remainder.

Marketing and purchasing co-operatives registered an annual increase during 1967 of \$208,000,000 or 11 p.c. in business volume which was made up of farm product marketings \$1,373,000,000, retailing of merchandise and supplies \$681,000,000, service revenue \$25,000,000 and miscellaneous income \$12,000,000, for a total of \$2,091,000,000. Farm product marketings were up by \$134,000,000, grain sales accounting for \$85,000,000 of the increase. Dairy products and livestock and products were up by \$26,000,000 and \$15,000,000, respectively. Although fruit and vegetable marketings were also substantially higher, most of the increase was due to a return to normal production in the tree fruit area of British Columbia which had suffered severe frost damage in the previous year. Honey marketings were down, reflecting a decline in the yields of Canadian bee colonies in 1967. Supply sales rose by \$72,000,000 or 12 p.c. during the year, with most sales categories contributing to the increase. Supply sales tend to rise at a fairly steady rate over the years whereas farm marketings, particularly wheat, fluctuate as a result of crop failures, over-production, etc., on both a national and international basis. Assets of the marketing and purchasing co-operatives totalled \$859,000,000 at year-end, a rise

* Prepared in the Economics Branch, Canada Department of Agriculture, Ottawa.

of \$82,000,000 or 11 p.c. over 1966, with most of the increase (\$62,000,000) occurring in inventories and property and equipment. Since the increase in assets was largely financed by short-term liabilities, members' equity declined during the year from 48 p.c. to 46 p.c.

41.—Summary Statistics of Co-operative Marketing and Purchasing Associations, 1963-67 and by Province, 1966 and 1967

Year and Province	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business ¹
	No.	No.	\$'000	\$'000	\$'000
1963.....	1,583	1,339,000	1,100,200	489,000	1,617,900
1964.....	1,546	1,305,000	1,234,000	522,800	1,780,600
1965.....	1,495	1,307,000	1,201,700	549,400	1,774,600
1966.....	1,420	1,329,000	1,238,600	609,600	1,882,900
1967.....	1,357	1,363,374	1,372,842	681,356	2,090,976
Province					
Newfoundland.....	1966 39	9,000	300	6,800	7,200
	1967 38	9,448	414	7,538	7,999
Prince Edward Island.....	1966 16	11,000	4,400	6,400	10,900
	1967 15	9,672	4,546	7,348	12,031
Nova Scotia.....	1966 79	31,000	27,100	19,500	47,100
	1967 82	30,811	30,704	21,718	53,088
New Brunswick.....	1966 48	16,000	13,100	14,300	27,800
	1967 49	16,399	14,251	15,662	30,332
Quebec.....	1966 403	83,000	164,000	133,600	301,900
	1967 401	84,949	183,032	151,739	340,522
Ontario.....	1966 196	112,000	120,500	100,000	225,300
	1967 156	105,122	110,860	110,476	225,208
Manitoba.....	1966 105	181,000	54,900	46,300	113,000
	1967 96	190,579	57,019	51,379	120,392
Saskatchewan.....	1966 296	451,000	423,100	130,100	562,200
	1967 282	447,111	478,065	143,876	631,583
Alberta.....	1966 142	241,000	231,900	72,600	306,800
	1967 141	276,510	268,355	89,963	360,652
British Columbia.....	1966 91	58,000	82,200	47,500	130,800
	1967 92	55,271	92,173	48,325	141,534
Interprovincial.....	1966 5	136,000	117,100	32,400	149,900
	1967 5	137,502	133,423	33,332	167,335

¹ Includes other revenue.

Service co-operatives provide services to their members such as trucking, cold storage, grazing, medical insurance, rural electrification, etc., and, in conjunction with their main function, some service co-operatives are engaged in the marketing of farm products and the sale of supplies. Total business volume of 1,074 service co-operatives in 1967, with a membership of 317,000, was \$59,353,000, consisting of service revenue \$36,474,000, miscellaneous income \$1,482,000, and sales of farm products and supplies \$21,397,000. Total assets at year-end amounted to \$122,346,000 of which members' equity represented 52 p.c. Fishermen's co-operatives, numbering 86 with a membership of 9,000, reported business volume in 1967 of \$29,076,000, including fish marketings \$25,637,000, fishing and other supplies \$3,039,000, and service revenue and other income \$400,000. Assets totalled \$19,060,000.

42.—Products Handled by Marketing and Purchasing Co-operatives, 1965-67

Product	Value of Sales		
	1965	1966	1967
	\$'000	\$'000	\$'000
Marketing	1,291,700	1,233,600	1,372,842
Dairy products.....	296,600	306,900	332,610
Fruits and vegetables.....	46,900	42,400	47,877
Grains and seeds.....	574,100	587,000	672,303
Livestock and livestock products.....	218,000	234,400	248,902
Eggs and poultry.....	51,200	54,000	57,200
Honey.....	4,800	5,200	3,616
Tobacco.....	1,400	700	1,485
Wool.....	1,800	1,300	1,105
Miscellaneous.....	6,900	6,700	7,744
Purchasing	549,400	609,500	681,356
Food products.....	150,700	166,900	189,472
Clothing and home furnishings.....	17,000	21,500	21,924
Hardware.....	38,700	41,500	50,011
Petroleum products.....	90,300	94,600	99,277
Feed.....	161,900	142,200	153,307
Fertilizer and spray material.....		39,900	55,276
Machinery and equipment.....	35,700	38,300	40,131
Building material.....	30,800	35,400	37,230
Miscellaneous.....	24,300	29,200	34,728
Totals	1,751,100	1,848,100	2,051,198

Wholesale co-operatives are federations of local co-operatives which act as central marketing agencies and distributors for the farm products and supplies of the local co-operatives. Their sales are reported separately from those of the local co-operatives, since they are largely a duplication of the sales made by the locals. For 1967, eight wholesales reported total sales of \$542,000,000, a gain of 17 p.c. over 1966. Farm product marketings were \$193,000,000, including livestock \$100,000,000 and dairy products \$40,000,000. Supply sales totalled \$349,000,000 of which the largest items were food products \$95,000,000, feed \$83,000,000, and petroleum \$61,000,000. Assets for the nine wholesales (one of which is a wholesaler for the other wholesales) amounted to \$190,000,000 at the end of 1967.

Arctic co-operatives (not included in the above figures), initiated in 1959 under the Co-operative Development Program for the benefit of the native population, have since enjoyed continuing and expanding support from the people of that region. These co-operatives have vigorously promoted the marketing of native handicrafts. For the year 1967, total sales of 22 Arctic co-operatives (there were an additional 13 ready to begin operations in 1968) located in the Northwest Territories and northern Quebec exceeded \$2,000,000 and assets amounted to \$1,600,000 of which members' equity, which originally started at a very low figure, represented 50 p.c.

PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.—Controls Affecting the Marketing of Farm Products

Subsection 1.—Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners for Canada which, since 1912, has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935.

The Board of Grain Commissioners for Canada.—The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three—a chief commissioner and two commissioners—reporting to the Minister of Agriculture.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C. The Executive Offices of the Board and other principal offices are situated at Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west. Total personnel is approximately 1,000, including Canadian Government Elevators staff.

On a fee basis, the Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts. All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give direction regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator; refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four assistant commissioners—one in Alberta, two in Saskatchewan and one in Manitoba. These assistant commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the uniform quality of the top grades of Red Spring wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

The Board's Research Laboratory, located at Winnipeg, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples to obtain information on the quality of the various grain crops grown each year and on the quality of grain shipped. Basic research is also undertaken, the program being directed toward better understanding of what constitutes quality in cereal grains and toward improvement in the methods of assessing quality.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act 1 p.c. of the purchase price of wheat, oats, barley, rye, flaxseed and rapeseed purchased by such licensees.

The Canadian Wheat Board.—The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada" and now operates under RSC 1952, c. 44 as amended. The Board accomplishes its objective through regulation and agreement. It owns no grain handling facilities but, by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic or overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters. In its sales operations, the Board endeavours to meet the wishes of overseas buyers and, on occasion, enters into direct contracts. When an exporter completes an export sale, in his capacity as an agent of the Board, he is responsible for the transaction; he completes the transaction with the buyer and settles with the Board for the purchase of the wheat from the Board.

When the commercial storage facilities are inadequate to handle all the grain produced, it is necessary for the Board to regulate the flow of grain from the producer to these forward positions. The first step is accomplished by the use of producer's delivery permits issued annually by the Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulating the amount of grain delivered by the producer to the country elevator by the use of a quota system and, by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process—transporting the grain from the country elevators to large terminal elevators in Eastern Canada, Churchill or on the West Coast—is carried out by the railways. The Wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs are set by an agreement between the railways and the Government of Canada.

The fourth major step—storing and handling of the grain at terminal elevators—is done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William-Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Lakehead or Vancouver positions.

The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakehead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under delivery quotas established by the Board. Cash advances are interest-free as far as producers are concerned.

Western Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge, and the general level of prices received by the Board is determined by competitive conditions in world markets. The only subsidy received by the farmer in the Canadian wheat marketing system is the part-payment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of 178,000,000 bu.

Subsection 2.—Controls Over Farm Products Other Than Grain*

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy. Closely related is regulatory action designed to protect the consumer.

Producers have been concerned about another type of market control, namely that which will give either their organizations or a government agency influence over the price received. In a highly specialized commercial agriculture such as Canada now has, the producer is dependent on the price of his product for his livelihood. Canadian farmers have long attempted to obtain some measure of market control through voluntary organizations, mainly marketing co-operatives. All provinces have made provision for the incorporation of such co-operatives and most, if not all, have provided other assistance to them. In the federal field, the Agricultural Products Co-operative Marketing Act encourages marketing under a co-operative plan.

* Prepared in the Economics Branch, Canada Department of Agriculture, Ottawa.

Other legislation provides for legal control over the marketing of agricultural products, either by a producers' board or a government agency. Legislation of this type includes that pertaining to milk control boards, to producer marketing boards and to industry marketing commissions. Measures pertaining to grain marketing have been reviewed in Subsection 1, pp. 937-941, and the Agricultural Stabilization Act, which provides price support for certain key products is discussed in the Agriculture Chapter, pp. 469-470.

Product Controls.—The federal and provincial departments of agriculture co-operate in establishing and enforcing grades of quality standards for various foods. Some control over size and type of containers used for distribution of agricultural products is exercised by the Canada Department of Agriculture and the Department of Industry, Trade and Commerce enforces regulations pertaining to weights and measures (see p. 963).

Controls related to health and sanitation in food handling are developed and enforced at all three levels of government—municipal, provincial and federal. Examples of provincial and municipal action include laws pertaining to the pasteurization of milk, inspection of slaughter-houses and sanitary standards in restaurants. At the federal level, inspection by the Health of Animals Branch of the Department of Agriculture of all meat carcasses that enter into interprovincial trade is required. The Food and Drug Directorate of the Department of National Health and Welfare has wide control over the composition of foods and over misleading advertising of foods and drugs.

Marketing Controls.—*The Agricultural Products Co-operative Marketing Act.*—In the late 1930s, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would give to the producer the maximum sales return for his product, less a maximum margin for handling expenses agreed upon in advance. Thus, the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has continuously served agricultural producers since 1939.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price paid to producers for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. During 1968 agreements were made for the marketing of maple syrup and apples for processing in Quebec and beans in Ontario.

Milk Control Legislation.—Most of the provinces enacted milk control legislation prior to 1940. Some of them finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to license those engaged in the fluid milk industry and can revoke licences for failure to conform with the orders of the milk control board.

In all provinces with such boards, the milk control board or similar agency sets the minimum price which distributors in specified markets may pay producers for Class I milk, that is, milk actually sold for fresh fluid consumption. In British Columbia, a formula is used as a guide in determining minimum prices to producers. Most provinces set either minimum or maximum wholesale and retail prices for fluid milk. Quebec sets a minimum and maximum price range. Saskatchewan sets minimum prices applicable to all retail milk sales and maximum prices applicable to milk sales off retail wagons, as well as a minimum-maximum price range at the wholesale level. Minimum prices are in effect in Alberta, Nova Scotia and New Brunswick. Maximum prices are set in Manitoba and no

control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia. In these three provinces some degree of price competition has developed between store sales and home delivery.

The powers given to or requirements made by milk control boards include: (1) authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences, and to establish a price for milk; and (2) authority to require a bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before ceasing to accept milk from any producer, and producers to give notice before ceasing to deliver milk to any distributor.

The Ontario Milk Marketing Board, a producer-controlled agency, was officially established by the Milk Commission of Ontario on Nov. 1, 1965. The Board was delegated certain powers by the Commission in respect to the production, marketing and transportation of milk and has the power to set the price that milk distributors must pay to their suppliers.

The Canadian Dairy Commission.—The Canadian Dairy Commission was established by Federal legislation and commenced operations on Apr. 1, 1967. This is a new departure in the area of agricultural marketing because it is the first national marketing board to be established since the Canadian Wheat Board was created in 1935. The Commission has the power to purchase any dairy product and package, process, store, ship, insure, import, export, or sell or otherwise dispose of any dairy product purchased by it. The Commission may also make payments to producers of milk and cream for the purpose of stabilizing the price of these products.

The objects of the Commission are to provide producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment, and to provide consumers with a continuous and adequate supply of high-quality dairy products. The Federal Government, through the Canadian Dairy Commission, supports the income of manufacturing milk and cream producers by means of "offer-to-purchase" programs for certain dairy products and direct subsidy payments.

In the 1967-68 dairy support year, the Federal Government introduced a global subsidy eligibility quota which was directly related to the domestic consumption of milk marketed by manufacturing milk and cream shippers. Individual quotas were allocated on the basis of the shipper's deliveries during the previous dairy support year, with certain exceptions.

Producer Marketing Boards.—During the 1930s strong support developed for legislation whereby agricultural producers could exercise legal authority under certain conditions to control the marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but proved *ultra vires*. The Natural Products Marketing (British Columbia) Act, 1936 was *intra vires* of provincial government powers and provided the model from which marketing board legislation has evolved in all 10 provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These powers include authority for a duly constituted producer board to control the marketing of 100 p.c. of a specified commodity produced in a designated area. A producers' board, in at least some provinces, may set production quotas for each farmer. One producers' board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant-Governor in Council.

The powers of a producers' board provided by provincial legislation are necessarily limited to intraprovincial trade. Under the Agricultural Products Marketing Act, the Federal Government may delegate to a marketing board with respect to interprovincial and export trade similar powers to those obtained with respect to intraprovincial trade under provincial authority. This Act also gives the Governor in Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in the production and marketing of commodities controlled by it for the purposes of the board, the creation of reserves and the equalization of returns.

In 1967 there were 118 producer marketing boards operating in Canada, including the Canadian Wheat Board which was established at the federal level. All of the provinces except Newfoundland had one or more boards established under their jurisdictions, with Quebec accounting for 67 and Ontario 22. It is estimated that approximately 47 p.c. of 1967 farm cash income was received from sales made under the control of producer marketing boards. Commodities sold through the boards included wheat, hogs, milk for factory-made dairy products, fruits, potatoes and other vegetables, tobacco, poultry, wool, soybeans, sugar beets, honey, maple products and pulpwood. As at Nov. 1, 1967, 67 of the provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government; five boards had received authority with regard to nine commodities to collect levies in excess of administrative expenses.

Section 2.—The Department of Consumer and Corporate Affairs

Legislation that received Royal Assent on Dec. 21, 1967 (SC 1967-68, c. 16), transformed the former Department of the Registrar General of Canada into the new Department of Consumer and Corporate Affairs. The duties, powers and functions of the Minister extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcy and insolvency; and patents, copyrights and trade marks.

The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs. Branches within the Bureau include Service and Information, Research, Operations, Legal and Standards. Regional Offices are being established at Halifax, Montreal, Toronto, Winnipeg and Vancouver. Other Branches and Divisions of the Department are: Combines Branch under the Director of Investigation and Research (Combines Investigation Act), Bankruptcy Branch, Corporations Branch, Trade Marks Branch, Patent and Copyright Office, Registration Branch, Office of the Custodian of Enemy Property, Financial and Administrative Services Branch, Personnel Branch and Information and Public Relations Branch. The Restrictive Trade Practices Commission (Combines Investigation Act) is domiciled in the Department and reports directly to the Minister.

Combines, Mergers, Monopolies and Restraint of Trade*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade that serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

By amendments that came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2,

* Revised by D. H. W. Henry, Q.C., Director of Investigation and Research, Combines Investigation Act, Department of Consumer and Corporate Affairs, Ottawa.

32, 33, 33A, 33B, 33C and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or lessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. Although Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is likely to lessen competition unduly in respect of prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry". Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canadian competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger that has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly that has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any service he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance". The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused or counselled the refusal of supplies to a merchant if there were reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "loss-leaders" or as bait advertising or was making a practice of engaging in misleading advertising in respect of such articles or of not providing services that purchasers of such articles might reasonably expect.

The Director of Investigation and Research is responsible for investigating combines and other restrictive practices, and the Restrictive Trade Practices Commission is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister of Consumer and Corporate Affairs. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses,

search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement, and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this hearing, the Commission prepares and submits a report to the Minister of Consumer and Corporate Affairs, ordinarily required to be published within thirty days.

Under the provisions of the Act, general inquiries may be made into restraints of trade which, although not forbidden or punishable, may affect the public interest. The courts, including the Exchequer Court of Canada, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention or directing the dissolution of a merger or monopoly as the case may be. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. Prosecutions for offences against the substantive provisions of the legislation (other than Sect. 33C which is punishable only on summary conviction) may be taken either in the provincial courts or with the consent of the accused in the Exchequer Court of Canada.

In the period Jan. 1, 1966 to Nov. 30, 1968, the following reports of inquiries under the legislation were published:—

- (1) Pricing Practices of Miss Mary Maxim Ltd.
- (2) Pricing of Ready-Mixed Concrete, Windsor, Ont.
- (3) North Star and Shell Gasoline Consignment Plans.
- (4) Trade Practices in the Phosphorous Products and Sodium Chlorate Industries.
- (5) "Specials" in Eggs, Kingston Area, Ont.
- (6) Glued-Laminated Timbers.
- (7) Resale Prices of Corning Glassware.
- (8) Dairy Products, Montreal.
- (9) Resilient Flooring, Toronto.

These reports and copies of the annual reports under the Act may be obtained from the Queen's Printer or the office of the Director of Investigation and Research, Combines Investigation Act, Department of Consumer and Corporate Affairs, Ottawa.

Patents

Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

1.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1963-67

Item	1963	1964	1965	1966	1967
Applications for patents..... No.	26,409	27,057	27,811	30,093	29,618
Patents granted.....	21,225	23,230	23,451	24,241	24,432
Granted to Canadians.....	1,682	1,763	1,734	1,131	1,827
Caveats granted.....	256	266	250	275	258
Assignments.....	24,180	25,313	26,487	27,795	27,804
Fees received, net..... \$	1,922,250	2,002,271	2,046,174	2,249,532	3,550,685

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to 21,432 in the year ended Mar. 31, 1967. Roughly, 68 p.c. of the patents granted resulted from inventions made by residents of the United States, 8 p.c. by residents of Britain and other Commonwealth countries and 5 p.c. by

residents of Canada. Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian *Patent Office Record* gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1845 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland, Japan, Egypt, Germany, Ireland, Colombia, Czechoslovakia and Yugoslavia.

Copyrights, Industrial Designs and Timber Marks

Copyright protection is governed by the Copyright Act (RSC 1952, c. 55) in force since 1924. Protection is automatic without any formality. However, a system of voluntary registration is provided. Application for registration should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada . . . in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol . . . or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Canada belongs to the Universal Copyright Convention. This means that the works of Canadian authors are protected in the United States without the formality of compulsory registration or the obligation of printing in the United States, provided that, from the first publication, the work bears in a prominent place the following identification: ©, followed by the name of the proprietor and the year of publication.

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States. Protection of industrial designs and of timber marks is afforded under the Industrial Design and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office.

2.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1963-67

Item		1963	1964	1965	1966	1967
Copyrights registered.....	No.	7,279	7,098	7,244	7,720	7,575
Industrial designs registered.....	"	788	814	846	1,030	1,088
Timber marks registered.....	"	3	2	1	3	—
Assignments registered.....	"	1,279	1,165	1,021	2,421	1,948
Fees received, net.....	\$	31,145	31,040	32,818	37,651	37,212

Trade Marks

The Trade Marks Office, a Branch of the Consumer and Corporate Affairs Department, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark and

every registration of a registered user. The required fee payable on application for registration of a trade mark is \$35, for advertisement of an application \$25 and for registration of a person as a registered user of a trade mark, \$35.

3.—Trade Marks Registered, Years Ended Mar. 31, 1963-67

Item		1963	1964	1965	1966	1967
Trade marks registered.....	No.	4,620	4,905	4,824	5,097	5,704
Transfers registered.....	"	2,887	3,534	3,685	3,508	4,155
Trade mark registrations renewed.....	"	2,657	3,105	2,821	2,727	2,914
Copies prepared.....	"	1,529	1,415	1,866	24,137	32,610
Fees received, net.....	\$	346,387	363,481	388,682	412,568	429,658

Section 3.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1967, provincial government liquor authorities operated 1,160 retail stores and had 130 agencies in smaller centres of population.

Government revenue specifically related to alcoholic beverages and details of sales by value and volume for each province are given below. DBS report, *The Control and Sale of Alcoholic Beverages in Canada* (Catalogue No. 63-202) shows further detail as well as volume figures of production and warehousing transactions, the value and volume of imports and exports and the assets and liabilities of provincial liquor commissions.

4.—Revenue of Provincial and Territorial Governments Derived Specifically from the Control and Sale of Alcoholic Beverages, Years Ended Mar. 31, 1966 and 1967

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages levied by eight provinces.

Province or Territory	1966			1967		
	Net Income from Sales ¹	Sales Tax, Licences and Permits, and Other	Total	Net Income from Sales ¹	Sales Tax, Licences and Permits, and Other	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	3,920	4,592	8,512	5,143	4,736	9,879
Prince Edward Island.....	1,812	645	2,457	1,980	708	2,688
Nova Scotia.....	15,005	331	15,336	15,663	287	15,950
New Brunswick.....	11,907	388	12,295	12,386	429	12,815
Quebec.....	60,376	21,776	82,152	67,025	22,535	89,560
Ontario.....	95,987	30,753	126,740	104,520	30,634	135,154
Manitoba.....	17,924	3,404	21,328	19,809	3,599	23,408
Saskatchewan.....	18,443	468	18,911	21,116	516	21,632
Alberta.....	29,212	1,846	31,058	33,282	2,123	35,405
British Columbia.....	41,154	666	41,820	44,255	726	44,981
Yukon Territory.....	921	132	1,053	1,014	143	1,157
Northwest Territories.....	1,157	69	1,226	1,385	55	1,440
Canada.....	297,818	65,070	362,888	327,578	66,491	394,069

¹ After provision for depreciation on fixed assets and capital expenditure met out of operating income; includes commission on general sales tax collections.

Revenue of the Federal Government derived specifically from the control and taxation of alcoholic beverages comprising excise duties, excise taxes, import duties and certain fees and licences in that connection is shown in Table 5.

5.—Revenue of the Federal Government Derived Specifically from the Control and Taxation of Alcoholic Beverages, Years Ended Mar. 31, 1963-67

NOTE.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000
On Spirits.....	152,907	155,545	165,638	193,159	199,024
Excise duty.....	122,021	129,399	134,716	156,942	158,157
Licences.....	8	9	8	9	9
Import duty.....	30,878 ¹	26,137	30,914	36,208	40,858
On Beer.....	98,354	103,116	105,685	108,234	113,609
Excise duty.....	98,097	102,914	105,386	107,917	113,254
Licences.....	3	3	3	3	3
Import duty.....	254 ¹	199	296	314	352
On Wine.....	6,417	5,504	6,634	7,203	8,231
Excise taxes.....	3,727	3,814	4,092	4,402	4,752
Import duty.....	2,690 ¹	1,690	2,542	2,801	3,479
Totals².....	257,678	264,165	277,957	308,596	320,864

¹ Includes an import surcharge of 15 p.c. ad valorem effective from June 25, 1962 to Feb. 20, 1963, when it was reduced to 10 p.c. ad valorem. The import surcharge was removed entirely as of Apr. 1, 1963. ² Drawbacks and refunds of duties and taxes have not been deducted.

Table 6 shows the value of sales of alcoholic beverages in 1965-67 but it should be noted that these figures do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.

6.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1965-67

Province or Territory	Spirits			Wines		
	1965	1966	1967	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	7,421	8,570	11,210	631	626	677
Prince Edward Island.....	3,308	3,564	3,993	367	377	401
Nova Scotia.....	19,504	21,536	23,512	2,914	3,056	3,166
New Brunswick.....	15,177	15,894	17,469	2,741	2,796	2,870
Quebec.....	94,879	131,651	144,284	19,339	28,504	31,427
Ontario.....	222,104	252,651	257,750	28,752	32,633	35,291
Manitoba.....	25,890	28,499	32,342	3,597	4,051	4,471
Alberta.....	22,431	25,285	29,299	3,607	3,957	4,399
Saskatchewan.....	42,559	47,983	54,810	5,606	6,546	7,780
British Columbia.....	64,825	78,304	83,665	9,249	12,194	12,867
Yukon Territory.....	1,040	1,173	1,377	168	197	225
Northwest Territories.....	1,066	1,268	1,562	159	196	237
Canada.....	520,204	616,378	661,282	77,130	95,133	103,811

6.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1965-67—concluded

Province or Territory	Beer			Totals		
	1965	1966	1967	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	14,428	15,719	17,226	22,480	24,915	29,113
Prince Edward Island.....	2,001	2,301	2,515	5,676	6,242	6,909
Nova Scotia.....	18,351	20,119	20,725	40,769	44,711	47,403
New Brunswick.....	14,026	15,757	16,128	31,944	34,447	36,467
Quebec.....	134,418	138,052	144,698	248,636	298,207	320,409
Ontario.....	199,797	208,752 ^r	218,179	450,653	494,036 ^r	511,229
Manitoba.....	32,210	32,542	33,914	61,697	65,092	70,727
Saskatchewan.....	26,616	27,646	29,047	52,654	56,888	62,745
Alberta.....	37,044	40,539	42,898	85,209	95,068	105,488
British Columbia.....	50,811	50,642	59,420	124,885	141,140	155,952
Yukon Territory.....	1,146	1,171	1,280	2,354	2,541	2,882
Northwest Territories.....	1,128	1,205	1,344	2,353	2,669	3,143
Canada.....	531,976	554,445^r	587,374	1,129,310	1,265,956^r	1,352,467

Volume of sales, as shown in Table 7, is a more realistic indicator of trends in consumption, although, as a measure of personal consumption by Canadians, it is subject to the same limitations as value sales in respect of purchases by non-residents.

7.—Volume of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1965-67

Province or Territory	Spirits			Wines		
	1965	1966	1967	1965	1966	1967
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	216	257	336	57	55	57
Prince Edward Island.....	103	108	122	54	52	46
Nova Scotia.....	634	699	764	375	387	394
New Brunswick.....	475	473	518	338	341	343
Quebec.....	3,061	4,159	4,552	2,253	3,264	3,579
Ontario.....	7,668	8,724	8,474	3,686	4,024	4,119
Manitoba.....	828	885	999	485	520	568
Saskatchewan.....	713	799	949	529	565	615
Alberta.....	1,295	1,451	1,625	758	895	1,054
British Columbia.....	2,193	2,659	2,860	1,396	1,862	1,868
Yukon Territory.....	27	32	37	14	18	21
Northwest Territories.....	26	31	39	13	17	19
Canada.....	17,239	20,277	21,275	9,953	12,000	12,683
	Beer			Totals		
	1965	1966	1967	1965	1966	1967
	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	3,668	3,959	4,372	3,941	4,271	4,765
Prince Edward Island.....	696	796	814	853	956	982
Nova Scotia.....	6,875	7,506	7,721	7,884	8,592	8,879
New Brunswick.....	5,246	5,541	5,592	6,059	6,555	6,453
Quebec.....	85,317	85,544	88,850	90,631	92,967	96,981
Ontario.....	103,871	107,640	112,347	115,225	120,388	124,940
Manitoba.....	13,442	13,222	13,917	14,755	14,627	15,484
Saskatchewan.....	11,467	11,926	11,971	12,709	13,290	13,535
Alberta.....	18,679	19,193	20,131	20,732	21,539	22,810
British Columbia.....	24,406	23,950	28,193	27,995	28,471	32,921
Yukon Territory.....	266	286	313	307	336 ^r	371
Northwest Territories.....	263	278	323	302	326	381
Canada.....	274,196	279,841^r	294,544	301,393	312,118^r	328,502

Section 4.—Miscellaneous Aids or Controls

The National Energy Board

The National Energy Board was established under authority of the National Energy Board Act, 1959 (SC 1959, c. 46), as amended, for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the design, construction and operation of those oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and is to recommend such measures as it considers necessary or advisable in the public interest with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. Certain amendments made to the regulations in 1966 increased the quantities of electric power and energy that the Board may authorize by order to be exported, authorized the Board to handle applications for the exportation and importation of small quantities of gas, where the volume of such exportation or importation does not justify the usual procedure, and empowers the Board to authorize the export of power and energy under emergency conditions. The Board, which reports to the Minister of Energy, Mines and Resources, consists of a chairman, a vice-chairman and three other members.

The Board is charged with the administration of federal oil policies, first introduced in 1961 in the shape of a National Oil Policy which had the initial objective of attaining certain target levels of oil production, including natural gas liquids. Production which had averaged only 544,000 barrels per day in 1960, averaged an estimated 1,185,000 barrels per day in 1968. The oil policy also relates to the conditions for the domestic and export marketing of Canadian oil. Objectives in this latter field are pursued almost wholly on the basis of voluntary arrangements with the companies concerned. In the domestic market the principle objective of the policy is to ensure that oil demands arising in Canada west of the Ottawa Valley are substantially supplied from indigenous sources. Canadian oil exports are virtually all to the United States and are the subject of periodic consultation between the two countries.

The National Power Policy, announced in 1963, encourages the development of large-scale power sources at lowest possible cost; the distribution of the benefits thereof as widely as possible through interconnections between power systems within Canada; and the long-term export of large blocks of power where such exports will induce early development of Canadian power resources. This policy also encourages the export of various classes of power under suitable interconnection agreements to provide for mutual assistance in emergencies and for other economic benefits which can be derived by both parties through co-ordinated operation and development. In pursuance of these aims, the Board co-operates with other agencies in the consideration of interprovincial and international interconnections of electric power systems. In this context it is worthy of note that within a very few years almost all the power systems in Canada and the United States will be tied together in one vast power pool.

During the year 1968, the Board issued 1,008 certificates, licences, permits and orders compared with 1,079 during the year 1967. The Board held a number of public hearings and, resulting therefrom, issued certificates authorizing the construction of a new international power line, additional gas pipeline facilities and additional oil pipeline facilities. One application for additional gas pipeline facilities and a companion application for a licence to import gas were dismissed. The licences, permits and orders issued concerned the export of electric power and energy, the export of natural gas and butanes and the import of natural gas. The exemption orders issued related to the construction of pipelines or branches or extensions thereof not exceeding 25 miles in length. The Board issued a total of 577 orders relating to the crossings of and by pipelines, 21 orders approving plans, profiles and books of reference, and 109 orders granting leave-to-open to oil and gas pipelines

including orders approving higher maximum operating pressures. Generally speaking, these orders relate to protection and safety in pipeline operations. The Board carried out numerous field inspections concerning the pressure testing of new oil and gas pipelines, the re-testing and internal sand-blasting of existing pipelines as well as the testing of gas compressor and oil pumping stations. Field inspections were also made resulting from complaints received from individual landowners in regard to pipeline construction.

The financial aspects of regulatory matters associated with the operation of pipeline companies and international power lines under the Board's jurisdiction received constant surveillance. The financial structure, financial responsibility, accounting practices, rates, tolls and tariffs were reviewed and evaluated as appropriate to the requirements of the National Energy Board Act. During 1968 the Board also conducted special studies on matters such as Uniform Accounting Regulations for pipeline companies, the possible financial effects on the oil and gas industry of the Carter Royal Commission Report on Taxation, and the rates of return of certain pipeline companies. In co-operation with the Canadian Transportation Commission a study has been instituted with respect to proposed regulations covering the construction and operation of combined pipelines for the transportation of hydrocarbons and commodities. The export and import of gas and the export of electric power, particularly with respect to border price arrangements, receive close scrutiny by the Board.

In the performance of its obligations in 1968, the Board carried out a number of special studies and maintained liaison with other responsible authorities.

Studies were continued or started during the year in the field of electric power, including an economic study on linking the Prince Edward Island power system with the Maritime Power Pool by means of high voltage cables; assistance in the study of a proposal to supply the major part of Newfoundland's power needs to the year 1992 from Lower Churchill Falls via a high voltage direct current transmission line; and collaboration in studies on the electric power aspects of the Fundy Tidal Power scheme in relation to possible markets for electric power in the Maritimes, Quebec and New England. The Board is co-operating with the Federal Power Commission of the United States in carrying out a new Power Survey of Canada and the United States. The development of the Canadian long-term energy forecast continued throughout the year. Detailed engineering and geological studies of hydrocarbon reservoirs were conducted as part of the Board's continuing program to maintain up-to-date estimates of reserves and producibility of crude oil, natural gas and natural gas liquids in Canada. Records were maintained of estimates of reserves of oil, natural gas and natural gas liquids in the United States and other important oil producing areas. Studies were made of trends of growth of reserves of hydrocarbons and forecasts made of future reserves to be found.

The Board continued to co-operate with the Canadian Standards Association in the preparation and completion of standard codes for the design, construction and operation of pipelines. Studies were continued in the development of computer programs for oil and gas pipelines as well as electric power systems.

Trade Standards

The Standards Branch of the Department of Consumer and Corporate Affairs consolidates under one Director the administration of the National Trade Mark and True Labelling Act, the Precious Metals Marking Act, the Weights and Measures Act, the Electricity Inspection Act and the Gas Inspection Act.

Commodity Standards.—On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. This is exemplified in the National Trade Mark Garment Sizing Regulations which were passed on Mar. 16, 1961. In addition, where manufacturers

descriptively label any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215), commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada or for which application for registration has been made must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act.

Weights and Measures.—The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada; it also requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of sales by short weight or short measure. During 1967, 671,765 prepackaged articles were checked for weight or measure and 472,365 inspections of devices were made.

Electricity and Gas Inspection.—Responsibilities of the Standards Branch, under the Electricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 20 districts for administration of the two Acts and the staff numbers 237. During the year ended Mar. 31, 1967, 1,356,034 meters were tested. In 1966, there were 6,322,532 electricity meters and 1,715,627 gas meters registered in Canada.

Subventions and Bounties on Coal*

A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years, were designed to further the movement of Canadian coals by equalizing as far as possible their laid-down costs with the laid-down costs of imported coals in various market areas. With the take-over of major mines by the Cape Breton Development Corporation and the assumption by Nova Scotia of additional responsibilities for other mines, federal subvention of Nova Scotia coal terminated on Mar. 31, 1968. The transfer to New Brunswick of administration of financial assistance for the coal of that province resulted in the termination of federal subvention of New Brunswick coal in December 1968. Subvention continued to be available for certain coals of Western Canada but was in a phasing-out process, particularly in relation to export coal.

* Revised by the Dominion Coal Board, Ottawa.

8.—Expenditure for Coal Subventions, by Province, 1963-67

NOTE.—Tonnage and expenditures shown in a given year, being on a calendar-year basis, are not necessarily in direct relationship; certain of the amounts include adjustments on movements of previous years.

Province	1963	1964	1965	1966	1967
Nova Scotia..... ton	2,428,819	2,336,571	3,465,093	3,647,386	3,415,230
\$	14,442,122	12,780,461	21,569,607	27,610,279	29,583,325
New Brunswick..... ton	191,765	407,120	582,192	767,900	687,125
\$	540,351	1,263,668	1,808,219	1,925,500	2,421,328
Saskatchewan..... ton	89,311	128,215	176,224	200,273	269,695
\$	65,542	93,415	122,547	135,562	186,132
Alberta and eastern British Columbia..... ton	63,346	51,296	65,006	50,210	70,078
\$	172,782	145,545	205,071	167,585	254,517
British Columbia and Alberta export..... ton	716,740	1,001,230	1,060,311	1,117,084	1,185,990
\$	2,323,118	2,911,292	2,964,107	3,129,294	3,277,230
Totals..... ton	3,489,981	3,924,432	5,348,526	5,782,853	5,628,118
\$	17,543,915	17,194,381	26,669,551	32,968,220	35,722,532

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), was designed to assist the Canadian steel industry and only incidentally affects coal. It provides for the payment of 49.5 cents per ton on bituminous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Payments under the Act were discontinued in 1968 because of circumstances connected with the establishment of the Cape Breton Development Corporation. Payments for the years 1963-67 were as follows:—

<i>Item</i>		<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>
Quantity.....	ton	482,406	472,968	337,302	202,181	119,516
Amount.....	\$	<u>238,791</u>	<u>234,119</u>	<u>166,964</u>	<u>100,079</u>	<u>59,161</u>

PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

Two series of figures are included in this part which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first, under the heading of "Administration of Bankrupt Estates" is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section under the heading of "Returns under the Bankruptcy and Winding-Up Act" which is compiled by the Dominion Bureau of Statistics. This series is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-Up Act) and, since 1955, includes business failures only (see p. 965). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

Administration of Bankrupt Estates.*—The Bankruptcy Act, which was last revised in 1949, was amended by SC 1966, c. 32. These amendments were instigated by recent exposures and suggestions of illegal and improper practices in connection with bankruptcy proceedings or administration. They do not constitute a complete revision of the Bankruptcy Act but were rather designed to provide, as an interim measure, remedies to the most urgent areas of complaints. They provide the Superintendent of Bankruptcy with direct and immediate authority in the field of investigation and inquiry, and tighten the procedures and requirements in a number of areas, such as that of proposals which an insolvent person may make to his creditors. In other words, these amendments were intended to provide remedies in situations where it had been shown by experience that abuses of the bankruptcy process are most likely to occur. The amendments also contain a new Part X entitled "The Orderly Payment of Debts" which may come into force in any province at the request of the provincial authorities concerned. This Part came into force in Alberta on Apr. 17, 1967, and in Manitoba on June 1, 1967.

* Prepared by the Superintendent of Bankruptcy, Ottawa.

1.—Summary Statistics of Estates Closed during 1966 under the Bankruptcy Act

Province or Territory	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT ¹					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Realization by Trustee	Costs of Admini- stration	Costs as Percentage of Realization
	No.	\$'000	\$'000	\$'000	\$'000	p.c.
Nfld.....	—	—	—	—	—	—
P.E.I.....	2	13	78	20	3	15
N.S.....	36	538	2,480	330	100	30
N.B.....	20	331	2,044	191	82	43
Que.....	1,642	9,129	40,253	4,060	1,844	45
Ont.....	2,027	15,103	67,085	5,052	2,383	47
Man.....	100	395	1,892	156	76	49
Sask.....	35	63	595	27	19	70
Alta.....	63	1,060	4,597	565	187	33
B.C.....	147	3,060	6,698	1,275	481	39
N.W.T.....	—	—	—	—	—	—
Totals.....	4,072	29,692	125,722	11,676	5,175	44
	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT ¹			PROPOSALS UNDER SECT. 27 (1) (a)		
	Paid to Unsecured Creditors	Retained by Secured Creditors	Average Percentage Recovered by Creditors	Proposals Closed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors
	\$'000	\$'000	p.c.	No.	\$'000	\$'000
Nfld.....	—	—	—	—	—	—
P.E.I.....	17	93	22	—	—	—
N.S.....	230	612	9	4	476	34
N.B.....	109	762	5	—	—	—
Que.....	2,216	8,488	6	326	29,161	2,046
Ont.....	2,669	18,835	4	45	10,173	1,468
Man.....	80	1,035	4	10	253	79
Sask.....	8	282	1	—	—	—
Alta.....	378	401	8	—	—	—
B.C.....	794	2,996	12	11	1,158	143
N.W.T.....	—	—	—	—	—	—
Totals.....	6,501	33,504	5	396	41,221	3,770

¹ Includes summary administration provisions of the Bankruptcy Act.

Returns under the Bankruptcy and Winding-Up Acts.*—The DBS statistics concerning bankruptcies and insolvencies cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. The figures of Table 2 cover business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel.

* Prepared by the Business Finance Division, Dominion Bureau of Statistics.

2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1958-67

Year	Atlantic Provinces	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1958.....	36	1,376	545	28	18	51	71	2,125
1959.....	36	1,366	658	26	20	47	76	2,229
1960.....	48	1,638	914	34	28	46	120	2,828
1961.....	47	1,450	932	39	25	62	104	2,659
1962.....	33	1,694	1,177	47	36	94	109	3,190
1963.....	60	1,987	1,389	45	37	67	92	3,677
1964.....	67	1,872	1,281	53	30	80	116	3,499
1965.....	43	1,748	1,248	41	22	103	90	3,295
1966.....	40	1,698	1,022	55	29	79	84	3,007
1967.....	43	1,446	893	60	35	64	90	2,631

3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1958-67

Year	Agriculture, Forestry, Fishing, Trapping and Mining	Manu- fac- turing	Con- struc- tion	Transportation, Communi- cations and Storage	Trade	Finance and Public Utilities	Service	Not Classified	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1958.....	67	356	367	105	882	42	295	11	2,125
1959.....	81	374	449	76	906	36	307	—	2,229
1960.....	100	323	619	129	1,229	65	363	—	2,828
1961.....	86	285	470	113	1,234	69	402	—	2,659
1962.....	93	326	573	143	1,496	82	477	—	3,190
1963.....	111	365	714	166	1,634	110	577	—	3,677
1964.....	146	327	706	181	1,492	92	555	—	3,499
1965.....	151	346	628	193	1,359	115	503	—	3,295
1966.....	156	323	559	168	1,236	95	470	—	3,007
1967.....	138	272	451	186	1,055	122	408	—	2,631

4.—Estimated Liabilities of Bankruptcies and Insolvencies, 1958-67

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1958.....	4,493	40,250	17,884	4,672	5,479	72,778
1959.....	2,302	50,034	34,156	3,866	5,429	95,786
1960.....	3,568	61,851	91,090	7,732	10,307	174,548
1961.....	4,714	49,133	48,352	7,075	7,246	116,520
1962.....	2,566	77,002	55,946	6,843	7,083	149,440
1963.....	3,788	91,467	84,260	8,330	7,757	195,602
1964.....	5,863	111,172	71,193	12,144	8,362	208,734
1965.....	2,513	107,182	258,934	15,234	9,787	393,650
1966.....	5,242	112,681	108,631	10,989	9,924	247,467
1967.....	6,772	123,457	60,422	21,344	6,069	218,064

5.—Bankruptcies and Insolvencies, by Industry and Economic Area, 1967

Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total	Total Liabilities
	No.	No.	No.	No.	No.	No.	\$'000
Primary Industries.....	2	53	50	12	16	138	10,192
Manufacturing.....	2	156	101	4	8	271	34,883
Foods and beverages.....	—	9	9	1	2	21	2,896
Textiles.....	1	3	6	—	—	10	2,602
Clothing.....	—	27	6	—	—	33	3,120
Wood.....	—	33	28	1	1	63	7,428
Paper and allied industries.....	—	25	8	—	2	35	2,441
Primary and fabricated metal, machinery, transportation equip- ment, electrical products and non- metallic mineral products.....	1	31	26	1	2	61	11,954
Chemical.....	—	4	2	—	—	6	324
Other industries.....	—	24	16	1	1	42	4,118
Construction.....	10	253	139	32	17	451	54,849
General contractors.....	5	109	56	15	8	193	38,422
Special trade contractors.....	5	144	83	17	9	258	16,427
Transportation, Communications and Other Utilities.....	1	91	69	22	3	186	7,936
Trade.....	22	567	370	67	29	1,055	45,631
Food.....	7	126	55	9	5	202	7,191
General merchandise.....	1	15	22	4	1	43	3,081
Automotive products.....	5	145	110	23	3	286	11,649
Apparel and shoes.....	—	76	40	9	1	126	4,812
Hardware.....	2	31	30	6	2	71	6,662
Household furniture and appliances	2	68	42	6	7	125	4,742
Drugs.....	—	9	3	—	1	13	844
Other trades.....	5	97	68	10	9	189	6,700
Finance, Insurance and Real Estate	1	77	33	6	5	122	37,766
Service.....	5	244	131	16	12	405	26,758
Education, health and welfare.....	1	21	4	1	1	28	3,015
Recreational.....	—	13	11	2	2	28	2,736
Business.....	—	30	18	2	2	52	4,909
Personal.....	3	152	70	11	3	239	14,410
Other.....	1	28	28	—	4	61	1,688
Totals.....	43	1,446	893	159	90	2,631	218,064

PART IV.—PRICES*

Section 1.—Index Numbers of Wholesale Prices

The term "wholesale prices" refers to transactions that occur below the retail level. It has more of a connotation of bulk purchase and sale than of any homogeneous level of distribution. Wholesale price indexes and individual price series have numerous uses, one of the most important of which is in escalator clauses of contracts where prices quoted are linked to movements of specified price indexes. They are also of major importance in studies of replacement and construction costs in investment projects; analyses of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuations for tax purposes and inventory analysis; and studies of changes in physical volume. Foreign companies also utilize the indexes in assessing the competitive position of Canadian goods.

General Wholesale Index.—The general wholesale index mainly includes manufacturers' prices but also incorporates those of wholesalers proper, assemblers of primary products, agents and operators of other types of commercial enterprises which trade in

* Prepared in the Prices Division, Dominion Bureau of Statistics.

commodities of a type, or in quantities characteristic of primary marketing functions. Prices are grouped according to a commodity classification scheme based on chief component material similarities. Indexes classified according to degree of manufacture are also available. In Table 1, the general wholesale index is presented for the period 1940-67. This index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed. Table 2 gives, for the years 1958-67, the general wholesale price index and two of its integral classifications—raw and partly manufactured goods, and fully and chiefly manufactured goods; also presented are two related systems—industrial materials and Canadian farm products. Annual price index numbers of non-residential building materials and residential building materials are given for 1958-67 in Tables 3 and 4, respectively; during 1966 the price samples of both of these indexes were revised and the price indexes given for that year are on the new sample basis.

In addition to the summary tables presented in this Section, DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) contains indexes of principal component groups of the wholesale price index. Other industrial price indexes included in the publication are: monthly selling prices of about 100 Canadian manufacturing industries, including commodity details; a system of annual bid price indexes relating to highway construction in which price movements are shown for completed units of work such as earth excavation and crushed gravel put in place; and price indexes for construction of transmission lines, distribution systems and transformation and switching stations of electrical utilities, based on labour, material and capital inputs into these facilities. (See also DBS publications, Catalogue Nos. 62-616, 62-520 and 62-526, respectively.) The monthly DBS publication *Prices and Price Indexes* also contains current series on retail price indexes and security price indexes covered in Sections 2 and 4 following.

1.—General Wholesale Index Annual Averages, 1940-67

(1935-39=100)

Year	Average	Year	Average	Year	Average	Year	Average
1940.....	108.0	1947.....	163.3	1954.....	217.0	1961.....	233.3
1941.....	116.4	1948.....	193.4	1955.....	218.9	1962.....	240.0
1942.....	123.0	1949.....	198.3	1956.....	225.6	1963.....	244.6
1943.....	127.9	1950.....	211.2	1957.....	227.4	1964.....	245.4
1944.....	130.6	1951.....	240.2	1958.....	227.8	1965.....	250.4
1945.....	132.1	1952.....	226.0	1959.....	230.6	1966.....	259.5
1946.....	138.9	1953.....	220.7	1960.....	230.9	1967.....	264.1

The gradual easing of demand pressures observed in the first half of 1966 continued into 1967 and resulted in a considerable moderation of wholesale price increases over those experienced in 1965. The 1967 rate of change in the general wholesale index was very similar to that of the preceding year (2.0 p.c. in 1967 vs. 1.9 p.c. in 1966). Within the general wholesale index, price movements were quite diverse with moderate increases in some groups partly offset by declines in other groups. The more gradual expansion in economic activity is reflected especially in the cyclically highly sensitive prices, e.g., field products and industrial materials. These products are characterized by a demand relatively unresponsive to price changes and often not only a reduced demand but even a levelling-off in demand may result in price declines. In general, the greater the degree of processing the less sensitive prices seem to be to economic fluctuations. Thus, in 1967 the slowdown in the rate of growth of economic activity had the least effect on the price

of manufactured goods which showed the highest increase. Fully and chiefly manufactured goods prices moved up slowly throughout the year whereas the price index of raw and partly manufactured goods remained virtually unchanged until December when it registered most of its 1.4-p.c. rise for the year. The wholesale index reflects the inter-yearly price movements of both these groups. Prices of industrial materials remained fairly constant in 1967 at a level of 3.2 p.c. below 1966. Animal product prices, which moved rather uncertainly throughout the year, ended with a moderate increase which was, however, more than offset by a pronounced decline in the price of field products so that farm products in total registered a 1.4-p.c. price decline.

2.—Annual Index Numbers of Wholesale Price Groups, 1958-67

(1935-39=100)

Year	General Wholesale Index	Raw and Partly Manufactured Goods	Fully and Chiefly Manufactured Goods	Industrial Materials	Canadian Farm Products		
					Field	Animal	Total
1958.....	227.8	209.3	238.3	229.8	171.4	274.5	222.9
1959.....	230.6	210.9	241.6	240.2	176.1	271.6	223.9
1960.....	230.9	209.6	242.2	240.4	189.1	264.1	226.6
1961.....	233.3	212.6	244.5	243.2	191.7	270.0	230.9
1962.....	240.0	223.8	249.0	248.0	195.5	286.0	240.8
1963.....	244.6	226.9	254.2	253.5	197.2	275.4	236.3
1964.....	245.4	225.7	256.4	258.3	198.2	267.3	232.7
1965.....	250.4	231.2	261.3	258.7	210.3	289.3	249.8
1966.....	259.5	242.7	268.6	261.4	209.7	321.5	265.6
1967.....	264.1	246.1	274.2	253.1	198.7 ^p	325.3 ^p	262.0 ^p

As shown in Tables 3 and 4, the price indexes of non-residential and residential building materials rose by 2.1 p.c. and 3.2 p.c., respectively, in 1967 as compared with 2.9 p.c. and 3.7 p.c. in the previous year.

3.—Annual Price Index Numbers of Non-residential Building Materials, 1958-67

(1949=100)

NOTE.—Details of weighting and construction and historical series appear in DBS publication *Price Index Numbers of Non-residential Building Materials, 1935-62* (Catalogue No. 62-506). Revised item list and weighting, effective January 1966, is available on request.

Year	Composite Index	Principal Components					
		Steel and Metal Work	Plumbing, Heating and Other Equipment	Electrical Equipment and Fixtures	Concrete Products	Lumber and Lumber Products	Blocks, Brick and Stone
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	20.1	21.4	11.5	11.1	10.5	9.1
1958.....	129.8	150.9	123.8	114.0	119.6	126.8	135.7
1959.....	131.7	152.6	126.0	119.2	118.6	131.3	137.4
1960.....	132.3	152.9	126.7	119.5	119.8	129.0	139.1
1961.....	131.1	153.2	126.3	113.8	119.8	127.6	133.0
1962.....	131.9	153.3	127.4	114.0	122.0	130.8	130.9
1963.....	135.1	157.1	127.1	118.6	126.0	136.6	135.2
1964.....	139.6	164.2	129.4	120.3	129.0	147.4	141.9
1965.....	146.8	177.7	137.1	120.5	133.5	154.6	149.3
1966.....	151.0	180.0	141.2	128.8	139.1	160.9	153.5
1967.....	154.2	177.6	145.4	132.4	143.5	168.2	158.5

4.—Annual Price Index Numbers of Residential Building Materials, 1958-67

(1949=100)

NOTE.—Details of weighting and construction and historical series appear in DBS publication *Price Index Numbers of Residential Building Materials, 1926-48* (Catalogue No. 62-505). Revised item list and weighting, effective January 1966, is available on request.

Year	Composite Index	Principal Components								
		Concrete Products	Bricks	Lumber and its Products	Wall-board and Insulation	Roofing Material	Paint and Glass	Plumbing and Heating Equipment	Electrical Equipment and Fixtures	Metal Products
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	7.6	5.0	42.6	11.3	2.9	3.2	18.6	3.8	5.0
1958.....	127.3	123.5	148.7	127.2	118.4	123.6	126.2	127.5	107.8	145.4
1959.....	130.0	121.1	150.9	130.7	119.3	125.6	127.7	128.5	116.3	147.1
1960.....	129.2	121.7	151.9	129.1	120.6	112.6	128.3	130.5	114.3	150.1
1961.....	128.3	120.5	145.0	128.0	122.6	107.1	131.2	131.0	112.0	149.9
1962.....	129.7	120.5	143.6	130.4	126.2	112.0	132.9	128.6	114.0	148.4
1963.....	133.9	123.8	149.3	135.5	127.9	124.2	142.8	130.2	118.1	143.2
1964.....	142.5	127.5	154.6	146.6	134.3	132.1	149.9	134.3	120.0	148.5
1965.....	148.9	132.4	163.2	153.9	139.1	128.0	157.3	141.2	120.1	152.5
1966.....	154.4	138.7	166.8	161.3	141.1	127.8	159.6	142.1	133.8	151.5
1967.....	159.3	143.5	169.9	166.8	143.5	135.2	166.3	146.5	141.3	149.0

World Wholesale Price Indexes.—Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 5.

5.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1965-67

(1963=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, July 1968.

Country	1965	1966	1967	Country	1965	1966	1967
Belgium.....	106	108	107	India.....	122	138	160
Brazil.....	289	396	495	Iran.....	107	106	106
Britain.....	104	108	107	Ireland.....	110	113	116
Canada.....	102	106	108	Korea, Republic of.....	148	161	172
Chile.....	187	230	274	Netherlands.....	110	115	115
Denmark.....	106	109	110	New Zealand.....	106	107	107
France.....	103	105	105	Norway.....	108	110	112
Germany, Federal Republic of.....	104	105	104	Sweden.....	109	112	112
Greece.....	105	108	109	Switzerland.....	102	104	104
				Turkey.....	108	113	119
				United Arab Republic.....	112	122	130
				United States.....	102	106	106

Section 2.—Consumer Price Index*

The purpose of the consumer price index is to measure the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. For a particular article or service, a price index number is simply the price of the article in one period of time expressed as a percentage of its price in a reference period, usually called a base period. However, indexes for individual goods may be combined to form indexes representing prices of broad groups of goods and services. Thus, the consumer price index relates to the wide range of goods and services bought by

* A comprehensive description of the index is contained in the publication *The Consumer Price Index (1949=100)*—Revision Based on 1957 Expenditures (Catalogue No. 62-512). A description of the change in the base period from 1949 to 1961 appears in the January 1969 issue of *Prices and Price Indexes* (Catalogue No. 62-002).

Canadian urban families. The index expresses the combined prices of such goods each month as a percentage of their prices in the base period 1961.

The group of goods and services represented in the index is called the index "basket" and "weights" are assigned to the price indexes of individual items for purposes of combining them into an over-all or composite index. The weights reflect the relative importance of items in expenditures of middle-size urban families with medium incomes. The basket is an unchanging or equivalent quantity and quality of goods and services. Only prices change from month to month and the index, therefore, measures the effect of changing prices on the cost of purchasing the fixed basket. The basket and weights now used in the index are based on expenditures in 1957 of families of two to six persons, with annual incomes of \$2,500 to \$7,000, living in cities of 30,000 population or over.

6.—Consumer Price Index Numbers, 1941-68

(1961=100)

Year	Index	Year	Index	Year	Index	Year	Index
1941.....	53.9	1948.....	75.0	1955.....	90.1	1962.....	101.2
1942.....	56.4	1949.....	77.4	1956.....	91.4	1963.....	103.0
1943.....	57.4	1950.....	79.6	1957.....	94.3	1964.....	104.8
1944.....	57.7	1951.....	83.0	1958.....	96.8	1965.....	107.4
1945.....	58.0	1952.....	90.2	1959.....	97.9	1966.....	111.4
1946.....	60.0	1953.....	89.4	1960.....	99.1	1967.....	115.4
1947.....	65.6	1954.....	89.9	1961.....	100.0	1968.....	120.1

The behaviour of the consumer price index during the years of almost continuous economic growth following the end of the Second World War up to 1959 is discussed in the 1967 Year Book at pp. 928-929 and the movement during 1959-66 in subsequent editions. Between 1966 and 1967, the consumer price index increased by 3.6 p.c. The major contributing factors to this increase were a 4.6-p.c. rise in the housing index, followed by higher prices for clothing (5.0 p.c.), transportation (4.2 p.c.) and food (1.3 p.c.). In 1968 the upward trend accelerated with retail prices averaging 4.1 p.c. higher than in the preceding year. Over one third of the increase since 1967 was attributable to higher housing costs which advanced 4.6 p.c., while other main contributing factors were a 0.9-p.c. rise in the heavily weighted food index and a 9.1-p.c. advance in the tobacco and alcohol index. The unusually large increase for tobacco and alcohol products was attributable mainly to the imposition of higher federal and provincial taxes.

7.—Consumer Price Indexes for Specific Groups, 1959-68

(1961=100)

Year	Food	Housing	Clothing	Transportation	Health and Personal Care	Recreation and Reading	Tobacco and Alcohol	Composite Index
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	27	32	11	12	7	5	6	100
1959.....	97.7	98.6	97.7	98.4	96.7	97.0	98.0	97.9
1960.....	98.5	99.6	98.6	99.8	99.5	99.8	99.6	99.1
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	101.8	101.2	100.9	99.9	102.0	100.8	101.3	101.2
1963.....	105.1	102.3	103.4	99.9	104.6	102.2	101.5	103.0
1964.....	106.8	103.9	106.0	101.0	108.0	103.9	103.4	104.8
1965.....	109.6	105.8	107.9	104.8	113.0	105.6	105.1	107.4
1966.....	116.6	108.7	112.0	107.3	116.5	108.6	107.6	111.4
1967.....	118.1	113.4	117.6	111.8	122.5	114.1	110.4	115.4
1968.....	122.0	118.6	121.1	114.7	127.4	119.7	120.4	120.1

Table 8 gives single commodity price relatives for a number of important items entering into the food component of the consumer price index.

8.—Urban Average and Relative Retail Prices of Staple Foods, 1959-68

(1961=100)

Year	Beef, sirloin, per lb.		Pork, rib chops, per lb.		Butter, creamery, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1959.....	101.0	104.0	67.6	92.9	69.6	99.6	54.4	96.6	23.4	99.2
1960.....	97.7	100.6	69.8	95.9	69.8	99.8	54.5	96.8	23.7	100.8
1961.....	97.1	100.0	72.8	100.0	69.9	100.0	56.3	100.0	23.5	100.0
1962.....	107.4	110.5	74.9	102.9	62.1	88.7	53.2	94.5	23.6	100.3
1963.....	103.7	106.8	74.4	102.3	58.5	83.6	58.4	103.7	23.8	101.5
1964.....	99.9	102.8	73.1	100.3	58.9	84.3	50.7	90.1	24.7	104.7
1965.....	106.6	109.7	81.4	111.9	61.4	87.8	54.3	96.5	25.0	106.4
1966.....	116.7	120.1	91.0	125.1	67.1	95.9	64.1	113.9	26.8	114.0
1967.....	123.7	127.2	85.1	116.9	70.4	100.7	54.1	95.2	29.0	123.4
1968.....	126.5	130.1	88.2	121.1	70.9	101.5	55.6	98.8	30.7	130.5
	Flour per lb.		Tomatoes, canned, 28-oz. tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1959.....	8.4	93.0	27.3	101.2	48.9	102.3	9.4	97.7	15.2	95.7
1960.....	8.8	97.4	27.8	102.8	58.0	121.4	9.4	98.0	15.6	98.0
1961.....	9.0	100.0	27.0	100.0	47.8	100.0	9.6	100.0	15.9	100.0
1962.....	9.8	109.4	26.6	98.7	47.3	99.1	9.5	99.6	16.4	102.9
1963.....	10.3	114.4	27.1	100.4	51.4	107.7	15.7	163.9	17.2	108.1
1964.....	10.8	121.0	31.5	116.6	59.6	124.7	14.1	147.5	18.1	113.4
1965.....	10.9	122.0	34.5	127.8	76.7	160.6	9.8	102.9	18.1	113.6
1966.....	11.4	127.2	35.8	132.8	64.0	133.9	9.5	99.5	19.0	119.5
1967.....	11.8	131.7	35.5	131.7	56.1	117.3	9.4	97.6	19.0	119.8
1968.....	12.0	133.5	33.9	125.7	62.7	131.3	9.4	98.7	19.6	123.3

Consumer Price Indexes for Regional Cities.—Table 9 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparisons. Their function is to measure percentage changes in retail prices—over a certain time in each city or city combination—of a fixed basket of goods and services representing the level of consumption of a particular group of families.

9.—Consumer Price Indexes for Regional Cities, 1959-68

(1961=100)

Year	St. John's, Nfld. (1951 =100)	Halifax, N.S.	Saint John, N.B.	Mont- real, Que.	Ottawa, Ont.	Toron- to, Ont.	Winni- peg, Man.	Saska- toon- Regina, Sask.	Edmon- ton- Cal- gary, Alta.	Van- couver, B.C.
1959.....	97.9	98.0	98.1	98.1	97.5	98.2	97.0	98.2	98.4	98.8
1960.....	99.0	99.0	99.2	98.9	98.8	99.4	98.5	99.2	99.3	99.7
1961.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962.....	100.8	101.3	100.9	100.2	101.2	100.9	101.3	101.7	101.0	100.3
1963.....	102.8	102.3	102.5	102.9	102.9	102.6	102.2	102.5	102.1	101.9
1964.....	103.9	102.7	103.5	104.5	104.5	104.3	103.8	103.5	102.6	102.6
1965.....	105.5	104.6	105.1	106.7	106.3	106.9	106.1	105.2	104.1	104.5
1966.....	108.0	107.4	107.8	109.9	110.4	111.6	109.3	108.3	107.5	107.0
1967.....	110.9	109.9	111.1	114.2	113.1	114.9	113.3	111.3	111.8	111.0
1968.....	115.9	114.2	115.2	118.1	118.3	119.3	118.2	115.8	116.7	115.1

World Retail Price Indexes.—In order to place movements in Canadian retail prices into perspective, they should be compared with price changes occurring elsewhere in the world. This is done in Table 10, which indicates the percentage changes over the previous year in the consumer price index for each country specified. For purposes of comparison, countries are listed, alphabetically, by region. It should be noted that all percentages are rounded to the nearest whole number.

10.—Percentage Changes in Consumer Price Indexes in Canada and Other Countries, 1965-67

(1963=100)

SOURCE: *United Nations Monthly Bulletin of Statistics*, October 1968.

Country	Change over Previous Year		
	1965	1966	1967
	p.c.	p.c.	p.c.
North America—			
Canada.....	2	4	4
Mexico (Mexico City).....	4	4	3
United States.....	2	3	3
South America—			
Argentina (Buenos Aires).....	29	32	29
Brazil (São Paulo).....	62	47	30
Chile (Santiago).....	29	23	18
Europe—			
Belgium.....	4	4	3
Denmark (1964=100).....	6	7	7
France.....	3	3	3
Germany, Federal Republic of.....	3	3	1
Greece.....	3	5	2
Ireland.....	5	3	3
Netherlands.....	5	5	3
Sweden.....	5	6	4
Switzerland.....	3	5	4
United Kingdom.....	5	4	2
Africa—			
Congo (Kinshasa).....	-2	16	37
Kenya (Nairobi).....	5	4	2
South Africa (European population).....	4	4	3
United Arab Republic (Cairo).....	15	9	1
Asia—			
Ceylon (Colombo).....	—	—	2
India.....	10	10	14
Indonesia (Djakarta).....	305	1,045	170
Korea, Republic of (Seoul).....	14	11	11
Pakistan (Karachi).....	6	7	7
Australasia—			
Australia.....	4	3	3
New Zealand.....	3	3	6
Middle East—			
Iran.....	2	—	2
Israel.....	8	8	2
Turkey (Istanbul).....	4	8	15

Section 3.—Consumer Expenditure

Household surveys of family expenditure provide information on consumer spending that can be related to family characteristics, such as geographical location, family size, income level, etc. A primary purpose of such surveys is to provide information for constructing, reviewing and revising the weights of consumer price indexes. Initially, the small-scale sample surveys carried out in Canadian urban centres since 1953 were designed to follow changes in the spending patterns of a well-defined group of middle-income urban families known as the target group of the consumer price index. However, in the years from 1953 to 1968, during which seven survey programs were conducted, a growing demand

for expenditure statistics to serve other needs of government, business, welfare organizations and academic research resulted in a widening in the scope and size of the surveys in recent years, and in a decision to expand the 1969-70 survey programs to provide a large-scale national survey for the first time since 1948-49.

The more restricted surveys (1953, 1955, 1957 and 1962) consisted of two phases—the collection by means of monthly record-keeping surveys throughout the reference year of detailed information on food expenditures, and the collection of information by annual recall of all family expenditure, income and change in assets and liabilities. In the other three surveys (1959, 1964 and 1967), the monthly surveys were omitted and the annual recall surveys were enlarged in scope to refer to all families and individuals, regardless of family type or income. The sample size was doubled in order to obtain about 2,000 usable annual records. The 1959 survey was unique in the series in that it was designed to represent population in all urban centres of 15,000 or over, whereas the 1964 and 1967 surveys were identical in city coverage, referring to 11 major regional cities.

Detailed results of the surveys have been published in two series of occasional publications covering food expenditure and all family expenditure, respectively. The most recent publication in the food expenditure series is *Urban Family Food Expenditure 1962* (Catalogue No. 62-524). The companion publication *Urban Family Expenditure 1962* (Catalogue No. 62-525) has been followed by *Urban Family Expenditure 1964* (Catalogue No. 62-527), from which a table presenting summary results appeared in the 1967 Canada Year Book, pp. 947-949. Results from the 1967 expenditure survey are expected to be available early in 1969.

A detailed survey of food expenditures will be carried out monthly throughout 1969 and a survey of the complete family budget will be taken early in 1970. The food expenditure survey sample comprises over 14,000 households distributed in monthly samples across the year. Families are requested to keep two-week records of quantities and costs of food purchased. Information on purchases of selected non-food items is being collected experimentally on the same record. The national survey of all family expenditures and income is expected to obtain about 15,000 usable family records. Both surveys will produce results for selected individual cities as well as for urban, rural non-farm and farm population.

Section 4.—Security Price Indexes

Security price indexes measure, through time, the effect of price change on the value of a portfolio of stocks bought and held by a hypothetical investor (as opposed to the more speculative trader). The portfolio represents stocks of Canadian companies listed on the Toronto, Montreal and Canadian stock exchanges. In the case of the mining and the two supplementary indexes (primary oils and gas, and uraniums), eligible issues are for producing mines and wells only. The number of shares held for each issue is in proportion to the total number of shares outstanding. Prices in the weekly common stock indexes (investors, mining and supplementary indexes) are Thursday's closing quotations. For the monthly preferred stock indexes, prices are monthly weighted averages of the daily closing prices in which weights are daily total sales. The indexes express current prices as a percentage of prices in 1956. Monthly and certain weekly indexes appear in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) and a weekly DBS report gives indexes on a weekly basis for all groups and sub-groups.

The investors index is comprised of three major groups, with relative importance indicated by percentage weights as follows: industrials, 67.5; utilities, 18.6; and finance, 13.9. Each major group is further divided into industry sub-groups corresponding to the standard industrial classification, adopted as the basis of classification in the revision of the index to the 1956=100 base. The mining index is composed of two groups: base metals with a weight of 64.6 p.c. and golds with a weight of 35.4 p.c. The two supplementary indexes of common stocks—primary oils and gas, and uraniums—and the index of preferred stocks are not divided into component groups.

11.—Investors Index Numbers of Common Stocks, by Month, 1967 and 1968
(1956=100)

Year and Month	Industrials							Utilities					Finance		Investors Composite Index									
	In-dus-trial Mines	Food-s	Bev-erages	Text-iles and Cloth-ing	Pulp and Paper	Print-ing and Pub-lish-ing	Pri-mary Met-als	Metal Fab-ricat-ing	Non-met-alle Min-erals	Pet-ro-leum	Chem-icals	Con-struction	Re-tail Trade	Indus-trial Total		Trans-porta-tion	Pipe-lines	Tele-phone	Elec-tric Power	Gas Dis-tribu-tion	Util-ities Total	Banks and Loan	Invest-ment	Fi-nance and Total
1967																								
Jan.....	185.2	200.4	218.5	285.2	332.6	512.4	109.6	114.8	130.2	141.0	134.4	65.0	243.4	171.1	187.6	161.6	115.2	131.9	312.3	156.0	130.3	141.5	134.3	163.3
Feb.....	186.2	205.8	224.4	285.5	342.8	527.6	115.0	119.0	133.4	142.8	142.8	67.0	247.1	176.3	202.9	164.3	116.2	140.8	312.6	160.9	136.8	151.0	141.8	168.8
Mar.....	187.1	211.8	232.8	285.5	348.8	553.0	113.4	118.7	137.3	139.1	149.3	63.8	260.2	177.4	212.3	170.8	120.5	141.8	322.8	166.1	146.4	152.3	148.5	171.4
Apr.....	187.5	215.8	238.4	285.5	347.6	581.0	115.8	117.8	138.7	147.0	151.0	63.8	244.7	180.4	221.1	180.5	120.6	143.0	333.4	170.6	151.1	155.2	152.6	174.8
May.....	188.5	219.8	240.6	285.5	341.0	637.3	116.0	117.2	145.0	147.4	141.9	68.2	244.9	181.6	220.4	181.0	121.6	137.7	318.6	168.5	150.7	155.6	162.6	175.3
June.....	183.6	211.3	239.5	285.5	334.4	661.2	110.4	115.9	130.1	132.9	128.5	66.2	244.3	181.7	220.4	183.1	118.3	132.8	337.2	171.0	141.3	147.4	143.6	174.5
July.....	198.2	210.8	238.6	285.5	333.5	694.1	108.4	119.1	124.4	132.1	124.8	64.5	256.5	185.2	227.2	201.7	116.4	138.0	335.8	175.2	142.8	141.4	142.6	177.5
Aug.....	201.6	215.7	248.8	285.5	331.8	728.0	110.9	120.0	123.4	134.1	123.0	65.3	273.5	190.4	206.3	196.6	111.9	142.8	373.3	173.4	146.6	144.4	146.2	180.1
Sept.....	203.0	216.7	249.0	285.5	330.0	739.7	108.8	117.9	122.4	135.1	122.6	65.3	273.5	187.3	201.1	186.6	108.7	137.3	375.4	167.5	123.9	134.8	133.7	176.3
Oct.....	208.8	203.2	238.8	197.1	113.7	716.5	102.1	115.9	116.8	164.8	112.9	62.9	274.2	183.7	192.2	190.2	107.5	133.3	384.0	166.6	134.2	131.8	133.6	173.7
Nov.....	208.8	203.2	238.8	197.1	113.7	703.7	95.4	106.7	104.6	167.0	109.7	62.6	269.5	183.7	192.2	190.2	107.5	133.3	384.0	166.6	134.2	131.8	133.6	173.7
Dec.....	219.2	199.7	235.7	173.4	107.5	673.4	95.7	103.4	89.8	176.7	98.3	58.2	266.3	184.5	185.7	186.8	104.1	128.6	374.2	161.8	139.1	127.8	135.4	173.6
1968																								
Jan.....	214.6	205.6	247.9	172.6	104.8	673.6	94.9	106.0	98.7	178.6	100.4	63.7	273.3	185.2	181.3	181.1	104.8	129.6	392.4	162.3	141.9	128.3	137.4	174.4
Feb.....	199.8	198.3	237.4	152.8	97.1	630.2	88.2	96.8	92.0	162.7	94.0	61.2	259.4	172.8	171.1	166.0	103.8	122.8	366.6	153.7	137.1	124.0	132.8	163.8
Mar.....	203.1	178.1	235.5	130.4	87.9	610.7	83.2	94.1	85.8	160.6	92.4	58.7	247.9	167.2	164.8	155.6	101.9	117.2	336.5	146.1	131.0	116.3	126.1	157.7
Apr.....	210.8	180.2	251.3	130.1	97.0	682.5	87.4	104.2	88.8	160.4	100.4	66.2	277.1	178.8	171.0	164.0	104.7	121.0	374.0	154.1	150.6	124.2	141.7	169.1
May.....	208.2	191.4	259.0	142.4	93.6	688.7	87.6	115.3	95.5	163.3	105.9	71.3	284.0	181.0	176.7	167.6	101.5	120.0	374.0	154.0	154.6	128.6	145.9	171.2
June.....	198.4	199.8	263.8	146.1	100.4	677.9	88.0	123.8	93.0	168.0	106.7	71.3	294.6	182.7	189.6	176.4	101.9	118.6	392.8	159.0	164.9	132.4	164.0	174.4
July.....	198.4	225.3	277.4	102.1	112.0	689.5	93.7	130.3	107.0	176.1	116.5	82.9	306.8	189.4	191.7	179.8	106.8	128.3	414.0	166.5	174.8	144.0	164.4	181.8
Aug.....	195.1	230.8	277.8	152.5	107.3	675.6	91.2	123.9	109.7	183.4	112.8	88.2	306.9	187.9	190.9	182.9	104.2	126.1	407.0	164.9	175.2	151.3	167.3	180.8
Sept.....	193.2	240.0	292.2	171.4	116.8	654.1	100.6	132.7	122.0	190.8	121.7	98.2	312.5	193.5	209.4	192.9	109.2	133.1	425.6	173.8	184.6	163.9	177.8	187.8
Oct.....	199.5	251.4	292.6	178.5	120.8	672.0	105.6	143.8	128.8	192.1	129.2	99.3	301.2	198.2	226.6	201.3	108.8	139.5	460.9	182.3	180.5	166.5	181.8	193.1
Nov.....	196.3	250.4	298.2	173.4	123.9	689.4	112.0	151.6	129.4	189.0	126.0	103.5	304.2	199.2	234.4	198.0	111.3	146.4	465.7	185.5	206.8	167.2	193.5	196.0
Dec.....	203.7	243.3	310.8	169.0	133.0	747.6	109.0	157.7	131.4	193.7	121.2	109.2	289.8	205.2	250.2	192.6	114.0	144.2	442.7	181.9	224.6	167.1	205.2	201.5

12.—Index Numbers of Common Stock Supplementary Indexes and Prices of Mining Stocks, by Month, 1967 and 1968

(1956=100)

Year and Month	Supplementary Indexes		Mining Stocks		
	Primary Oils and Gas	Uraniums	Gold	Base Metals	Composite
1967					
January.....	160.1	195.0	123.0	91.3	102.6
February.....	154.3	189.5	123.0	92.2	103.1
March.....	158.6	203.9	117.9	89.2	99.3
April.....	165.9	222.1	122.8	87.4	99.9
May.....	159.8	243.1	126.4	83.9	98.9
June.....	173.6	261.2	134.6	83.1	101.3
July.....	190.8	261.5	128.2	84.5	100.0
August.....	205.9	255.4	135.1	86.7	103.9
September.....	216.6	272.1	135.9	88.3	105.1
October.....	207.5	283.6	141.1	87.0	106.1
November.....	197.8	273.4	139.6	84.6	104.0
December.....	220.4	268.6	152.1	82.3	107.0
1968					
January.....	228.1	276.5	163.2	83.4	111.6
February.....	193.1	243.5	163.3	80.6	109.8
March.....	174.3	239.4	163.3	80.2	109.6
April.....	189.9	251.3	149.4	76.7	102.4
May.....	189.3	255.7	158.1	79.5	107.3
June.....	205.5	257.8	158.1	81.4	108.6
July.....	209.4	271.8	151.5	80.1	105.4
August.....	218.2	258.9	154.5	82.0	107.7
September.....	239.3	262.8	157.4	86.3	111.5
October.....	244.7	265.4	160.5	90.0	115.0
November.....	256.7	261.4	162.5	91.8	116.8
December.....	272.4	251.7	170.6	94.0	121.1

13.—Index Numbers of Preferred Stocks, by Month, 1959-68

(1956=100)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Av.
1959.....	95.1	96.0	96.1	96.3	97.4	96.6	96.8	95.8	93.4	90.9	90.3	90.2	94.6
1960.....	89.8	89.5	88.6	88.2	89.6	91.7	93.3	94.1	94.8	94.8	94.6	94.3	91.9
1961.....	95.0	95.2	94.9	96.0	97.1	97.7	98.4	98.3	99.5	100.7	100.6	99.9	97.8
1962.....	101.0	100.9	101.3	101.6	102.0	99.3	96.6	97.0	97.3	96.8	98.1	99.3	99.3
1963.....	102.0	101.5	101.2	101.9	103.9	103.5	102.2	101.6	101.6	102.4	102.6	102.7	102.3
1964.....	102.3	102.4	102.0	102.4	102.2	102.8	103.5	103.6	104.3	104.8	105.7	105.6	103.5
1965.....	106.3	106.8	105.2	104.0	103.7	103.5	102.8	101.3	100.9	100.6	100.0	98.1	102.8
1966.....	99.0	98.6	96.1	93.1	90.9	91.9	92.0	91.5	89.2	88.4	87.8	85.3	92.0
1967.....	87.0	89.6	90.7	91.9	91.4	90.2	90.5	90.6	87.2	83.6	82.2	80.0	87.9
1968.....	80.6	79.1	76.9	75.4	75.6	75.0	77.5	78.7	80.0	80.0	78.4	79.8	78.1

CHAPTER XXII.—FOREIGN TRADE

CONSPECTUS

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*The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.*

The subject of foreign trade covers more than the treatment of exports and imports of commodities, important though this is. In its broader sense, foreign trade is made up of the total international interchange of goods, services, securities and other financial transactions, all of which are presented in their appropriate relationship in this Chapter and in Section 4 of Chapter XXIV. Part I contains specially prepared information on Canada's trade with the European Economic Community. Part II gives detailed statistics of that trade. Part III outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure. Part IV contains a review of the extent of travel between Canada and other countries in 1967, with estimates of the amount of money expended for that purpose.

PART I.—CANADA'S TRADE WITH THE EUROPEAN ECONOMIC COMMUNITY*

The establishment of the European Economic Community (EEC) was an event of major significance not only to the six Western European countries involved but generally to the whole world of international trade. As one of the greatest trading nations of the world, Canada is vitally concerned with developments that affect its economic and trade interests. The progress toward the integration of Europe is a development of far-reaching consequences and has therefore continued to evoke considerable interest in Canada, as elsewhere. This study provides a synoptic review of Canada's trade with the EEC during the first decade of its operation. It describes and analyzes the salient features at an aggregate level and at the level of some principal commodities and commodity groups.

Background

The establishment of the European Economic Community was the culmination of a long process of attempts at European unity going back to the early nineteenth century. The German Zollverein formed in 1834 was the most important union then. A really

* Prepared by D. Paul Ojha, External Trade Division, Dominion Bureau of Statistics.

effective customs union was the Benelux formed in 1944 by Belgium, the Netherlands and Luxembourg. Belgium and Luxembourg had been linked by an earlier economic union since 1921.

It is not necessary to recall here the many details that form the background to the European Economic Community or the details of a parallel movement in Europe which led to the establishment in 1960 of the European Free Trade Association composed of the United Kingdom, Austria, Denmark, Norway, Portugal, Sweden and Switzerland, with Finland as an associate member from 1961. The European Economic Community was established as the result of the Treaty of Rome signed on Mar. 25, 1957, by Belgium, France, the Federal Republic of Germany, Italy, Luxembourg and the Netherlands. These countries had already been members of the European Coal and Steel Community (ECSC) which was formed in June 1952 following the agreement of Mar. 9, 1951, on the Schuman plan to pool the coal and steel resources of the countries concerned. Another treaty signed at the same time (March 1957) related to the establishment of the European Atomic Energy Community (Euratom).

Principal Objectives

The principal objectives of the Treaty of Rome were to promote harmonious development of economic activity within the Community, continuous and balanced expansion, greater stability, a steady improvement in living standards, and closer economic relations among the member states. These objectives were to be achieved through the creation of a common market; the gradual alignment of economic policies and, more specifically, the elimination of customs duties, quantitative restrictions on the import and export of goods, and of obstacles to the free movement of persons, services and capital; the establishment of a common external tariff on imports from third countries; the co-ordination of economic (including financial) policy, and the establishment of common policies for external trade, agriculture and transport; the creation of a European Social Fund to strengthen the employment potential and to raise the standards of living; the establishment of a European Investment Bank to promote investment and economic growth; and the association of other countries and overseas territories with a view to expanding trade and generally contributing to social and economic development. A transition period of 12 years, liable to extension up to 15 years, was provided for before the establishment of the Common Market.

Major Developments

The first objective of the EEC, the creation of a customs union, was fulfilled 18 months ahead of schedule, with the establishment of a common external tariff against imports from third countries effective July 1, 1968. Concurrently, the EEC countries made the first of their tariff cuts agreed to at the Kennedy Round of trade negotiations, with the result that the average EEC external tariff on manufactured goods came down to 10.7 p.c. The common agricultural policy is also in operation, although some matters of a regulatory nature still remain to be settled. While the customs union has been established, several important steps remain to be taken before an economic union is in effect. On July 1, 1967, the institutions of the three Communities—the ECSC, Euratom and the EEC—were merged into a single Commission which assumed all powers conferred by the three Treaties.

The economies of the countries that constitute the EEC were already witnessing considerable expansion, especially as the process of reconstruction following the Second World War provided a valuable opportunity for modernization of plant and equipment and as the result of the impetus given by United States aid to Europe under the Marshall Plan. For example, of the six countries that were later bound together in the EEC, France, the Federal Republic of Germany, Italy and the Netherlands were expanding their output faster than Canada, the United States and the United Kingdom, although increases began to slow down somewhat in the early 1960s relative to North America. The gross national product of the six countries more than doubled from \$166,700,000,000 (U.S.) in 1958—the year before the EEC went into operation—to \$340,400,000,000 (U.S.) in 1967. The index of industrial production (1963=100) rose nearly 64 p.c. from 72 in 1958 to 118 in 1967.

To be sure, there are wide differences in the rates of growth of the six countries, mainly because they began with different stages of development and because of the growth and location of new industries.

Trade Growth

As a unified market, therefore, the EEC now constitutes a very potent force in the world. During the first decade of its existence, EEC's intra-area trade increased 250 p.c. to about \$26,000,000,000 while its trade with the outside world rose 100 p.c. to about \$33,000,000,000. EEC has thus become the leading world trader, accounting for over 20 p.c. of total exports and 18 p.c. of total imports, as against the United States share of a little under 20 p.c. in exports and 16 p.c. in imports.

These figures are impressive but it is difficult to say how much of the expansion in intra-area trade has been the consequence of reductions in tariffs. The question of the actual effects of integration on trade flows is very complex as integration leads to both trade-creation and trade-diversion. No precise method has yet been found of computing the exact trade-creating and trade-diverting effects of economic integration, although research is in progress.

In the perspective of trade growth of industrial countries as a whole and in comparison with the European Free Trade Association (EFTA), the EEC did better in 1967. According to the annual report of the GATT, *International Trade, 1967*, exports from industrial countries increased by nearly 8 p.c., while exports from the EFTA increased by only 1 p.c. By contrast, EEC exports grew by almost 9 p.c. In the first half of 1968, the absolute amount of EEC exports exceeded that of EFTA by over 100 p.c., compared with only 47 p.c. in 1958.

Although in absolute magnitude the EEC is still far behind the United States in terms of gross national product and income per capita (less than half in 1966), there is little doubt that it is moving ahead at a rapid pace.

Canada's Trade with the EEC

Canada's traditionally favourable balance of trade with the EEC shrank from \$184,800,000 in 1958 to \$101,800,000 in 1968. While total trade with the six countries more than doubled in that period from \$659,700,000 to \$1,425,000,000 and total exports (including re-exports) rose more than 80 p.c. from \$422,300,000 to \$763,400,000, imports from the EEC rose twice as fast or about 180 p.c. from \$237,500,000 to \$661,600,000. Also, the growth of exports to the EEC did not keep pace with the over-all growth of Canada's export trade. Exports to the EEC constituted only 5.6 p.c. of exports to all destinations in 1968 compared with 8.6 p.c. in 1958. Statistics of Canada's trade with the EEC together with the balance of trade appear in Table 1.

1.—Canada's Trade with the EEC, 1958-68

Year	Total Trade		Exports		Imports		Balance of Trade
	Amount	Change from Preceding Year	Amount	Change from Preceding Year	Amount	Change from Preceding Year	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000
1958.....	659,731	+ 4.5	422,266	+ 4.1	237,465	+ 5.3	+ 184,801
1959.....	609,536	- 7.6	317,095	- 24.9	292,441	+ 23.2	+ 24,654
1960.....	735,442	+ 20.7	442,633	+ 39.6	292,809	+ 0.1	+ 149,824
1961.....	790,171	+ 7.4	471,948	+ 6.6	318,223	+ 8.7	+ 153,725
1962.....	796,793	+ 0.8	461,855	- 2.1	334,938	+ 5.3	+ 126,917
1963.....	828,628	+ 4.0	487,054	+ 5.5	341,574	+ 2.0	+ 145,480
1964.....	971,272	+ 17.2	565,590	+ 16.1	405,672	+ 18.8	+ 159,918
1965.....	1,150,128	+ 18.4	635,928	+ 12.4	514,200	+ 26.8	+ 121,728
1966.....	1,195,945	+ 4.0	645,325	+ 1.5	550,620	+ 7.1	+ 94,705
1967.....	1,315,534	+ 10.0	688,903	+ 6.8	626,631	+ 13.8	+ 62,272
1968.....	1,424,977	+ 8.3	763,396	+ 10.8	661,581	+ 5.6	+ 101,815

Trade by Section.—Because of a major revision of the Canadian commodity classifications (for exports in January 1961 and for imports in January 1964), historical data for previous years are not strictly comparable. However, both exports and imports are comparable back to 1960 on the basis of the new classifications, so that it is possible to examine Canada's trade with the EEC for the period from 1960 by section, as shown in Table 2.

2.—Canada's Domestic Exports to and Imports from the EEC, by Section, 1960-68

Year	Section I Live Animals	Section II Food, Feed, Beverages and Tobacco	Section III Crude Materials, Inedible	Section IV Fabricated Materials, Inedible	Section V End Products, Inedible	Section VI Special Transac- tions, Trade	Total
DOMESTIC EXPORTS TO THE EEC							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1960.....	93	129,162	104,105	178,117	26,905	200	438,582
1961.....	177	170,455	109,010	143,602	42,204	207	465,657
1962.....	316	156,531	109,740	123,955	63,816	521	454,879
1963.....	655	173,355	85,519	130,623	84,022	492	474,659
1964.....	799	165,486	147,116	154,940	86,387	418	555,147
1965.....	1,932	180,996	198,190	169,266	74,951	432	625,766
1966.....	2,406	172,199	214,166	176,945	70,595	437	636,746
1967.....	1,855	177,741	218,524	222,041	56,635	441	677,234
1968.....	1,092	142,703	271,277	260,414	71,991	892	748,369
IMPORTS FROM THE EEC							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1960.....	127	24,016	7,160	96,159	160,973	4,375	292,809
1961.....	132	26,362	6,526	108,789	171,580	4,834	318,223
1962.....	140	25,497	7,876	117,811	179,515	4,101	334,938
1963.....	131	28,351	7,139	117,767	185,394	2,792	341,574
1964.....	103	32,188	7,757	140,446	220,326	4,853	405,672
1965.....	269	35,074	8,332	195,405	268,172	6,950	514,200
1966.....	212	44,035	9,119	179,866	306,824	10,582	550,620
1967.....	664	49,122	8,099	196,928	363,086	8,732	626,631
1968.....	554	46,046	7,342	195,410	403,630	8,599	661,581

As shown in Table 2, there were, in absolute terms, increases in domestic exports to the EEC in every section between 1960 and 1968, although important shifts took place in the proportions contributed by the sections. Food, feed, beverages and tobacco (Section II) exports, which constituted 29.4 p.c. of total domestic exports in 1960, fell to 19.1 p.c. by 1968; exports of inedible crude materials (Section III) rose from 23.7 p.c. to 36.3 p.c. over the same period; and the proportion of inedible fabricated materials (Section IV) fell from 40.6 p.c. to 34.8 p.c. Inedible end products (Section V), on the other hand, although still a small proportion of total domestic exports to the EEC, registered an increase of over 50 p.c. in their share from 6.1 p.c. in 1960 to 9.6 p.c. in 1968.

As a proportion of total imports from the EEC, there were declines in every section except inedible end products, which showed a steadily upward trend from 55 p.c. to 61 p.c. between 1960 and 1968. The share of food, feed, beverages and tobacco decreased from 8.2 p.c. to 7.0 p.c.; inedible fabricated materials declined from 32.8 p.c. to 29.5 p.c.; and inedible crude materials from 2.4 p.c. to 1.1 p.c.

Trade by Stage of Fabrication.—Another way of looking at the performance of Canada's trade with the EEC is by stage of fabrication. Table 3, presenting these data for 1960 to 1968, shows that domestic exports in all three categories (crude materials, fabricated materials and end products) went up, as did imports in each of the three categories. A clearer picture is given in Table 4 which shows the proportions of exports to and imports from the EEC in each stage of fabrication for the years 1960 to 1968.

3.—Domestic Exports to and Imports from the EEC, by Stage of Fabrication, 1960-68

Year	Domestic Exports			Imports		
	Crude Materials	Fabricated Materials	End Products	Crude Materials	Fabricated Materials	End Products
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1960.....	225,934	180,162	32,485	10,502	102,501	179,807
1961.....	271,592	146,545	47,519	9,992	115,372	192,860
1962.....	258,125	125,143	71,611	9,754	123,136	202,050
1963.....	246,982	132,737	94,937	8,527	124,027	208,018
1964.....	285,759	157,471	111,916	10,508	147,243	247,919
1965.....	359,228	176,726	89,814	11,789	202,451	299,963
1966.....	374,918	180,452	81,376	12,967	187,725	349,927
1967.....	379,494	228,263	69,480	12,832	206,245	407,551
1968.....	399,649	264,601	84,116	11,788	205,571	444,227

4.—Domestic Exports to and Imports from the EEC, by Stage of Fabrication as a Percentage of Total Exports to and Imports from the EEC, 1960-68

Year	Domestic Exports			Imports		
	Crude Materials	Fabricated Materials	End Products	Crude Materials	Fabricated Materials	End Products
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1960.....	51.5	41.1	7.4	3.6	34.8	61.6
1961.....	58.3	31.5	10.2	3.2	36.0	60.8
1962.....	56.8	27.5	15.7	2.9	36.6	60.5
1963.....	52.0	28.0	20.0	2.8	36.3	60.9
1964.....	51.5	28.4	20.1	2.6	36.3	61.1
1965.....	57.4	28.2	14.4	2.3	39.4	58.3
1966.....	58.9	28.3	12.8	2.4	34.1	63.5
1967.....	56.0	33.7	10.3	2.1	32.9	65.0
1968.....	53.4	35.4	11.2	1.8	31.1	67.1

Table 4 shows that exports of crude materials as a proportion of total domestic exports to the EEC did not change significantly between 1960 and 1968, although there were fluctuations in individual years. Exports of fabricated materials declined as a proportion from 41.1 p.c. in 1960 to 35.4 p.c. in 1968. End products exports, on the other hand, made a sizable gain from 7.4 p.c. in 1960 to 20.1 p.c. in 1964, but went down again to 11.2 p.c. in 1968.

Canada's imports from the EEC have traditionally consisted of manufactured and, to a lesser extent, semi-manufactured goods; crude materials imports formed the very small proportion of 1.8 p.c. in 1968, down from 3.6 p.c. in 1960. Imports of fabricated materials more than doubled from \$102,500,000 in 1960 to \$205,600,000 in 1968, although as a proportion of total imports they declined from 34.8 p.c. to 31.1 p.c. over the same period. End products imports during the period varied between 58.3 p.c. (1965) and 67.1 p.c. (1968) of total imports.

Leading Exports to the EEC.*—As seen above, Canadian exports to the EEC have risen considerably in absolute terms since 1960 but, as a proportion of EEC's imports from third countries, they declined from 1.9 p.c. in 1958 to 1.5 p.c. in 1960 and 1.2 p.c. in 1967. There has been no regular trend in the composition of Canadian exports to the EEC,

*At the time of analyzing trends in principal exports and imports, data were not available for 1968. Therefore, the principal commodities were chosen on the basis of their rank in 1967 and 1968 data were added afterwards.

largely because over half of Canada's exports to the EEC still consist of food and crude materials subject to variations in supply and demand conditions and the level of economic activity in the importing countries.

Although wheat has always been the most prominent Canadian export to the EEC, its sales have varied from year to year, depending on the crop conditions within the EEC itself. The peak was achieved in 1961 when wheat sales were valued at \$155,300,000; they have since fluctuated at a somewhat lower level and were valued at \$108,400,000 in 1968.

The second best export in 1968 was wood pulp and similar pulp which then stood at \$87,600,000 compared with \$60,600,000 in 1967 and \$13,200,000 in 1960. Here, exports have shown a steadily rising trend since 1960, and since 1966 this item has been Canada's second largest export to the EEC.

5.—Leading Domestic Exports to the EEC, 1958-68

Commodity	1958	1959	1960	1961	1962	1963
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1. Wheat, except seed.....	102,450	97,053	110,991	155,305	129,834	133,626
2. Wood pulp and similar pulp.....	7,964	16,631	13,181	12,969	15,993	21,341
3. Iron ore.....	10,125	12,523	16,423	15,468	12,334	9,850
4. Zinc in ores, concentrates and scrap.....	1,801	1,207	1,909	4,451	2,436	2,421
5. Asbestos, unmanufactured.....	16,252	21,268	25,498	31,427	30,769	29,551
6. Aluminum including alloys.....	20,413	36,849	48,633	26,574	24,889	24,863
7. Barley.....	1,960	2,260	4,533	92	95	181
8. Copper and alloys.....	24,626	15,999	23,028	27,508	20,416	11,052
9. Lumber, softwood.....	2,182	1,407	4,041	5,249	8,291	10,590
10. Flaxseed.....	15,393	11,708	12,376	6,355	10,931	5,609

	1964	1965	1966	1967	1968
	\$'000	\$'000	\$'000	\$'000	\$'000
1. Wheat, except seed.....	109,642	125,231	118,292	118,409	108,439
2. Wood pulp and similar pulp.....	28,481	30,465	37,658	60,581	87,581
3. Iron ore.....	8,058	24,219	25,638	41,698	46,675
4. Zinc in ores, concentrates and scrap.....	23,992	29,643	29,709	33,361	36,686
5. Asbestos, unmanufactured.....	33,900	32,639	36,855	32,659	39,827
6. Aluminum including alloys.....	27,957	20,432	17,213	23,663	20,329
7. Barley.....	4,308	8,425	14,231	23,474	9,245
8. Copper and alloys.....	14,325	13,943	12,763	23,456	29,682
9. Lumber, softwood.....	13,813	17,524	17,708	18,806	19,579
10. Flaxseed.....	13,214	16,374	23,785	14,134	9,174

Leading Imports from the EEC.—Roughly two thirds of Canadian imports from the EEC consist of end products. As a matter of fact, these and fabricated materials have so far constituted virtually all of Canadian imports from this market. The share of crude materials was the highest at 3.6 p.c. in 1960 and has been steadily on the decline since, being only 1.8 p.c. in 1968. End products in 1968 constituted 67.1 p.c. and fabricated materials 31.1 p.c. of all imports.

Turning from aggregates to commodities, passenger automobiles and chassis have always been, by far, the largest Canadian import from the EEC during the period 1958-68, rising 71.1 p.c. between 1960 and 1968. The second highest purchase in 1968 was footwear valued at a record \$17,000,000, up from \$3,000,000 in 1960 and \$12,800,000 in 1967. Next came metalworking machinery at \$15,600,000, compared with \$18,600,000 in 1967 and \$2,800,000 in 1960. Table 6 traces the movement of the 10 leading import commodities from 1958.

6.—Leading Imports from the EEC, 1958-68

Commodity	1958	1959	1960	1961	1962	1963
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1. Passenger automobiles and chassis.....	33,263	49,641	43,032	42,480	40,643	37,131
2. Metalworking machinery.....	4,644	2,929	2,776	2,640	2,754	3,798
3. Structural shapes and sheet piling, steel.....	5,931	12,335	10,883	9,928	6,860	9,164
4. Office machinery and equipment, except computers.....	2,728	3,288	3,511	5,083	6,966	7,402
5. Plate, sheet and strip, steel.....	1,042	3,229	2,309	2,391	1,710	4,167
6. Bars and rods, steel.....	7,602	9,206	5,229	7,240	14,163	14,032
7. Fermented alcoholic beverages.....	3,223	3,509	3,682	4,429	5,017	5,246
8. Footwear.....	1,978	2,657	2,960	3,576	4,671	5,021
9. Tractors.....	130	1,013	1,660	1,094	1,465	3,295
10. Electronic computers and parts.....	—	—	—	27	199	330

	1964	1965	1966	1967	1968
	\$'000	\$'000	\$'000	\$'000	\$'000
1. Passenger automobiles and chassis.....	44,023	55,073	43,806	48,693	73,638
2. Metalworking machinery.....	7,020	9,697	14,142	18,571	15,583
3. Structural shapes and sheet piling, steel.....	14,706	23,869	16,417	18,097	15,504
4. Office machinery and equipment, except computers.....	9,274	10,344	13,634	17,163	14,397
5. Plate, sheet and strip, steel.....	2,890	23,276	13,961	14,545	13,140
6. Bars and rods, steel.....	23,809	30,413	18,645	13,449	12,221
7. Fermented alcoholic beverages.....	7,136	8,338	10,488	13,070	10,089
8. Footwear.....	6,596	7,112	8,660	12,811	16,998
9. Tractors.....	4,411	4,227	11,528	12,449	8,198
10. Electronic computers and parts.....	243	4,175	7,680	10,311	6,007

Canada's Trade with the Individual EEC Countries

Trade with Belgium and Luxembourg.—Canada has always had a favourable balance of trade with Belgium and Luxembourg, which are among the top 10 trading nations in the world and have, in fact, the highest per capita trade. The highest export surplus of \$71,500,000 was achieved in 1968. Wheat, traditionally the principal export to Belgium and Luxembourg, has been declining steadily since 1965. It was replaced by zinc in ores, concentrates and scrap in 1968 when it fell to third place following copper in ores, concentrates and scrap. Zinc exports have been between \$22,000,000 and \$23,000,000 annually and at \$23,000,000 in 1968 were, in fact, lower than the 1965 figure of \$23,600,000. Exports of copper in ores, concentrates and scrap rose to a record \$19,500,000 in 1968 from \$3,000,000 in 1967 and less than \$1,000,000 in 1964. In each year since 1960, the top three commodities have accounted for a sizable proportion of Canadian exports to Belgium and Luxembourg.

Canada's principal imports from Belgium and Luxembourg are fabricated materials such as steel bars and rods, structural shapes and sheet piling, cut but unset gem diamonds, and steel plates, sheets and strips.

Trade with France.—During the years after World War II, with the exception of 1959, Canada had a favourable balance of trade with France up to and including 1964—the highest in 1960 at \$23,500,000 and the lowest in 1962 at \$3,100,000. From 1965, however, the trade balance has been in France's favour—\$6,500,000 in that year, \$20,000,000 in 1966, \$46,500,000 in 1967 and \$37,400,000 in 1968.

Of the nine years (1960-68) considered here, wheat was the top export in 1961, 1963 and 1965, copper and alloys in 1964, 1967 and 1968, unmanufactured asbestos in 1962 and 1966, and in 1960 the top rank went to the omnibus group of synthetic and reclaimed rubber and plastics materials, not shaped. Among Canadian exports to France, the top three commodities in each year have accounted for roughly one third to over one half of the total domestic exports to that country. The percentage was as high as 54.1 in 1961 and as low as 31.7 in 1965; in 1967 and 1968 it was 36.9.

Canada's principal imports from France are passenger automobiles and chassis, books and pamphlets (not in English), steel bars and rods, and grape wines. In recent years, imports of electronic computers and parts have shown a tendency to rise, although they were considerably reduced to \$2,400,000 in 1968 from \$6,900,000 in 1967. Aircraft with engines were a major import in 1967 when they were valued at \$7,400,000.

Trade with Germany.—Canada's trade with the Federal Republic of Germany prior to 1952 included also trade with East Germany, although trade with the latter was never high during that period. Nevertheless, throughout the postwar period up to 1964, Canada had a trade surplus with the Federal Republic, with the sole exception of 1950 when there was a deficit of over \$2,000,000. In 1965, the situation reversed and the Federal Republic had a surplus amounting to \$16,300,000. Canada's deficit increased to \$55,500,000 in 1966 and to \$75,600,000 in 1967 but decreased to \$66,400,000 in 1968.

Excluding 1968, wheat has been the principal export to the Federal Republic during the 1960s. However, from the peak in 1961 at \$78,200,000 it showed a generally declining trend and in 1968 hit a low of \$20,900,000 and accounted for only 9.1 p.c. of Canadian exports to that country. Wood pulp and similar pulp replaced wheat as the top export in 1968 and accounted for 11.8 p.c. of total domestic exports. Copper in ores and concentrates, also higher than wheat in 1968, accounted for 9.7 p.c. of all exports.

Here again, the pattern is more or less in line with Canadian exports to most other EEC countries. The top three commodities accounted for over 30 p.c. of the total domestic exports; the percentage for the top three was the highest at 56.9 in 1961 and the lowest at 30.6 in 1966 and again in 1968. Asbestos, unmanufactured, and aluminum including alloys generally are the other principal exports to the Federal Republic.

Passenger automobiles and chassis imports, Canada's largest purchase from the Federal Republic, in 1968 were valued at \$54,200,000, a new high. Other important purchases from that country include steel bars and rods, steel plates, sheets and strips, dyestuffs, and tractors and parts.

Trade with Italy.—Canada had a favourable balance of trade with Italy during the postwar period except in 1958, 1959 and 1964. The 1968 surplus for Canada at \$32,900,000 was the highest on record, an improvement of about \$4,000,000 over 1967. The principal exports are wheat, wood pulp and similar pulp, iron ores, and aluminum including alloys; wheat was the top export except in 1964 and 1967. There seems to be a broader base of exports to Italy than to other EEC countries. The lowest percentage the top three export commodities accounted for in total domestic exports to Italy was 25.9 in 1964 and the highest was 49.7 in 1968.

The principal imports from Italy are last-made pairs of boots and shoes, calculating machines and parts, and, more recently, passenger automobiles and chassis, and canned tomatoes and tomato paste.

Trade with the Netherlands.—Canada has always had a favourable balance of trade with the Netherlands, the highest on record being \$115,800,000 in 1968. The principal exports to the Netherlands are wheat, wood pulp and similar pulp, and iron ore, with other commodities, such as aluminum including alloys, copper and alloys, and flaxseed, prominent in some years. Exports of aircraft and parts also became important in 1962 (when they were valued at \$4,700,000) and in 1968 (\$5,900,000). Here again, the concentration of exports is quite heavy as the three top items in a year have accounted for a percentage of total domestic exports varying from 35.0 in 1965 and 1966 to 48.2 in 1960.

Among Canadian purchases from the Netherlands, no particular item stands out and the importance of import commodities varies from year to year. Thus, for example, steel plates, sheets and strips, which are a relatively minor import from the Netherlands, suddenly shot up to \$6,800,000 in 1965 for just that one year. In recent years, vegetable oils and fats except essential oils have been bought from the Netherlands in amounts varying from \$3,500,000 to \$5,400,000. Over-all, therefore, there is no clear trend.

Problems and Prospects

EEC's exports and imports have both expanded rapidly during the first decade of its operation. There is some evidence of trade-creation but it is difficult to say precisely how much of this expansion is attributable directly to the formation of the EEC. For, even if the EEC had not been formed, some expansion would have taken place. There is also some evidence of trade-diversion in that the EEC's intra-area trade has expanded much faster than its extra-area trade. How much of it is the direct effect of the establishment of the Community is again difficult to say. In short, the impact of the EEC on intra-area trade cannot be distinguished from other influences such as scientific and technical advance and the existing trends in expansion of trade both with Western Europe and other areas. There is still a long way to go before an economic union can be said to have been established. It is too early, therefore, to see clearly the trade-creating and trade-diverting effects of the EEC. A definitive judgment will have to wait until more data become available, until the experience of the EEC is known over a longer period of time, and until methodological and conceptual problems involved in computing accurately the effects of trade-creation and trade-diversion are satisfactorily resolved.

The EEC's trade with Canada has expanded in absolute terms over the first decade of its operation; its exports to Canada rose 130 p.c. and its imports from Canada only 50 p.c. But, in relative terms, there has been a diminution in Canada's trade with the six countries. Not only do Canadian exports to the Community now form a smaller proportion of its exports to all destinations, they also constitute a smaller percentage of the EEC's total imports. As Canada's exports to the Community consist largely of food and crude materials, its position may be affected considerably by the operation of the Common Agricultural Policy, especially with respect to exports of wheat, of which the Federal Republic of Germany is at present the major buyer. The prospects for Canadian wheat generally depend on the situation of the Durum wheat harvest in Italy. It should be borne in mind that the EEC is now a net exporter of wheat in its trade with third countries. It exports indigenous soft wheat and flour and generally imports high-quality blending wheats and Durum wheat. Intra-area trade of the EEC in indigenous wheat has been increasing, especially since the removal of internal trade barriers.

Manufactured goods is the fastest growing component of EEC's import demand, and demand is also increasing for fabricated materials, steel and other metals, chemicals, paper and textiles as well as for forest products and unmanufactured asbestos. Canada's export performance will ultimately depend on such factors as the demand pattern of the Community, especially among the markets of the individual member countries, and Canada's ability to compete with other outside sources in meeting this changing pattern of import demand. It is, therefore, essentially a question of competitive strength.

As long as the cuts agreed to by the EEC during the Kennedy Round of trade negotiations are being made—and they will be completed by January 1972—Canadian industry may be able to resolve most of the problems posed by the coming into force of the common external tariff. But, in the longer run, it may be necessary to devise other ways of scaling the tariff walls erected around the Community. Direct Canadian investment in the EEC could be one way, as the United States has been doing. Canadian manufacturers may have to license their products for manufacture within the EEC or to set up subsidiaries there. Although the mutual interdependence of the EEC countries is undoubtedly increasing, there will always be demand for imports. Economic development, growing per capita income and rising standards of living will continue to create demand for imports from beyond the national frontiers. Some of this demand is bound to be for imports from outside the Community which is still evolving, so that it is not yet certain what the shape of things will finally be. In any case, given the right outlook on the part of Canadian industry, there should be no cause for undue pessimism nor for complacency, for the problems are real and the market must be cultivated assiduously if performance is to be maintained.

PART II.—FOREIGN TRADE STATISTICS*

Section 1.—Explanatory Notes on Canadian Trade Statistics

Sources.—Canadian foreign trade statistics are compiled from information recorded on customs documents received by the Dominion Bureau of Statistics from the various customs ports in Canada with the following exceptions: *electricity* exports are based on reports received from the National Energy Board and imports are based on reports received from public utility companies; and *crude petroleum exported by pipeline*, statistics for which are reported directly to the Bureau by the pipeline companies. Record is kept of value and, whenever possible, of quantity. In considering trade figures, it should be noted that the statistics do not necessarily reflect the financial transactions relating to the movement of goods since the method and time of payment are affected by many factors.

Coverage.—*Domestic exports* or *exports of Canadian produce* include exports of goods wholly produced in Canada together with exports of previously imported goods that have been changed in form by further processing in Canada. *Re-exports* or *exports of foreign produce* include previously imported goods that are exported from Canada in the same form as when imported. From January 1964, re-exports have also included exports of goods previously imported but stored in customs warehouses.

Imports, as from Jan. 1, 1964, include all goods cleared by customs immediately on arrival in Canada, plus goods entered into customs warehouses rather than cleared on arrival. For 1963 and earlier years, imports included goods cleared immediately on arrival plus goods cleared for consumption out of customs warehouses. The two types of record eventually cover the same totals, except for a small amount of goods entered into customs warehouses and then re-exported, but there may be an important difference in the time at which warehoused goods are recorded as imports; some shipments entering customs warehouses remain there for several months before clearance.

The most important exclusions from export totals are: current coin, gold, goods shipped to Canadian Armed Forces or diplomats stationed abroad, goods financed under the Defence Appropriation Act and shipped to other NATO countries, temporary exports for exhibition or competition, fuel and stores sold to foreign vessels and aircraft in Canada, settlers' effects, private donations and gifts, and identifiable tourist purchases—generally all temporary exports and goods merely moving in transit through Canadian territory.

The most important exclusions from import totals are: current coin, gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadian-owned military equipment returned to Canada, ships imported for use in foreign trade and ships of British construction and registry imported for use in the coasting trade, temporary imports for exhibition or competition, fuel and stores purchased by Canadian vessels and aircraft abroad, settlers' private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada—generally all temporary imports and goods merely moving in transit through Canadian territory.

Beginning Jan. 1, 1964, Canada's trade statistics are compiled on a "General Trade" basis instead of on the "Special Trade" basis used previously. The main difference in the case of figures recorded on the General Trade basis is that imports are entered as such whether the goods are cleared through customs for immediate domestic use or stored in a customs warehouse. Domestic exports remain the same on both bases but re-exports, after Jan. 1, 1964, include exports from customs warehouses which were previously excluded. Over a period of years, the totals of Canadian exports or imports would be almost the same on either basis but considerable differences might appear in individual years because of time of clearance and extent of business activity.

From Jan. 1, 1960, a new category was established in both export and import statistics entitled "Special Transactions—Non-trade". This category includes certain commodity

*Prepared in the External Trade Division, Dominion Bureau of Statistics.

movements which either have no international financial implications or, for various reasons, are better considered separately from merchandise trade in economic analysis. The value of transactions of these types is now excluded entirely from published totals of Canadian merchandise trade and does not appear in this volume, but statistics for the classes of this category are contained in the regular monthly export and import reports.

Beginning with statistics for January 1961, a new export commodity classification was used, based on the Standard Commodity Classification developed by the DBS as a tool for integrating statistical series derived from different sources. Whereas the classification previously used classified commodities primarily according to the material of which they were chiefly composed, the new classification places commodities in sections mainly according to stage of processing and purpose, as follows: Live Animals; Food, Feed, Beverages and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; End Products, Inedible; and Special Transactions—Trade.

As from Jan. 1, 1964, a new commodity classification was also introduced for import statistics, based on concepts similar to those embodied in the export commodity classification, so that there is now a closer approach to comparability between the two sets of statistics. As part of the change to the new classifications, the commodity detail shown in trade returns has been modernized by eliminating statistics on some commodities of minor significance and instituting new classes for many commodities of greater importance. The grouping system employed in the new classification also makes easier the identification of other commodities which may merit separate specification. For most of the commodities of greatest importance in Canadian exports, the classes of the new export commodity classification are substantially identical with those of its predecessor. The import commodity classification is more extensive than the export commodity classification and in its new form gives an up-to-date and comprehensive coverage of those commodities which constitute the bulk of Canada's import trade.

Valuation.—Export entries define the value of exports as the "actual amount received or to be received in terms of Canadian dollars, exclusive of all charges" (freight, insurance, handling, etc.). This definition would give values f.o.b. point of consignment for export but in practice it is not always followed. For example, in recent years a significant but indeterminate proportion of exports has been reported in United States dollars, resulting in some overstatement of the value of exports for the period prior to June 1961 and some understatement of their value in subsequent years.

The value of goods imported is usually the value as determined for customs duty. The Canadian Customs Act generally requires the valuation of goods f.o.b. point of shipment in the country of export but, at least in recent years, importers have often reported c.i.f. value for free goods or goods subject to specific rates of duty. An effort is made to ensure that f.o.b. values are consistently used in import statistics in the following cases: goods subject to dumping duty (from January 1959); raw cotton and crude petroleum from January 1962, retroactive to January 1960); raw sugar (from January 1963, retroactive to January 1961); and all shipments individually valued at \$100,000 or more (from January 1964). Only about one fifth of the value of imports is covered by these specific checks.

Country Classification.—Trade is credited to countries on the basis of consignment. For exports from Canada, the country of consignment is that country to which goods are sent at the time of export, intended to pass without interruption of transit except in the course of transfer from one means of conveyance to another. For imports into Canada, the country of consignment is the country from which the goods came without interruption of transit except in the course of transfer from one means of conveyance to another. This is not necessarily the country of actual origin, since goods produced in one country may be imported by a firm in another country and re-sold to Canada; in such cases the second country is the country of consignment to which the goods are credited. There is one exception to this rule; an attempt is made to classify by country of origin goods produced in South America, Central America, Bermuda and the Antilles and consigned to Canada.

from the United States. The effect of this procedure is to reduce slightly the imports credited to the United States and to increase those credited to South and Central American countries.

The country sub-totals include trade with Commonwealth and other countries (the Republic of Ireland and the Republic of South Africa) entitled to Preferential rates of duty. Trade with Alaska and Hawaii is included in the United States statistics in all the relevant tables included in this Chapter even though these two areas were separately classified prior to Jan. 1, 1969, and Jan. 1, 1960, respectively.

Discrepancies in Trade Statistics Between Canada and Other Countries.—Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include:—

- (1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.
- (2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.
- (3) Differing definitions of territorial areas.
- (4) Differing systems of crediting trade by countries, notably the consignment system used by Canada and the actual origin or ultimate destination system in use in some other countries.
- (5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 5, reference should be made to the explanatory notes on trade in Section 1. Exports and imports of gold are excluded from all tables.

1.—Value of Total Foreign Trade of Canada (excluding Gold), 1952-67

NOTE.—Figures have been revised to cover the adjustment for "Special Transactions—Non-trade"; see p. 986.

Year	Exports			Imports			Balance of Trade: Excess of Exports (+) Imports (—)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1952.....	4,282,361	54,814	4,337,175	2,162,882	1,753,535	3,916,418	+ 420,757
1953.....	4,097,111	55,158	4,152,269	2,417,960	1,829,848	4,247,808	— 95,539
1954.....	3,860,217	65,604	3,925,821	2,311,568	1,655,833	3,967,401	— 41,580
1955.....	4,258,328	69,448	4,327,776	2,638,037	1,929,718	4,567,754	— 239,978
1956.....	4,760,442	73,335	4,833,777	3,292,516	2,254,435	5,546,951	— 713,175
1957.....	4,788,880	95,261	4,884,141	3,223,197	2,250,149	5,473,346	— 589,205
1958.....	4,791,436	102,907	4,894,343	2,952,707	2,097,785	5,050,492	— 156,150
1959.....	5,021,672	118,628	5,140,300	3,143,065	2,365,856	5,508,921	— 368,621
1960.....	5,255,575	131,217	5,386,792	3,048,583	2,434,112	5,482,695	— 95,903
1961.....	5,754,986	140,229	5,895,215	3,115,408	2,653,170	5,768,578	+ 126,637
1962.....	6,178,523	169,190	6,347,713	3,480,282	2,777,494	6,257,776	+ 89,937
1963.....	6,798,529	181,613	6,980,142	3,542,585	3,015,623	6,558,209	+ 421,934
1964.....	8,094,219	209,186	8,303,405	4,034,903	3,452,804	7,487,707	+ 815,699
1965.....	8,525,078	241,599	8,766,677	4,366,849	4,266,300	8,633,143	+ 133,534
1966.....	10,070,627	254,693	10,325,320	4,831,709	5,034,730	9,866,439	+ 458,881
1967.....	11,111,580	299,284	11,410,864	5,096,920	5,978,279	11,075,199	+ 335,665

Treatment of Gold in Trade Statistics.—The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed minimum price. Also, gold may be bought or sold internationally without any physical

movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons, movements of gold in a primary or semi-fabricated state are excluded from the totals of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

2.—New Gold Production Available for Export, by Month, 1960-67

(Millions of dollars)

Month	1960	1961	1962	1963	1964	1965	1966	1967
January.....	14.5	14.1	8.4	13.1	12.8	14.8	9.5	8.1
February.....	15.0	14.2	18.1	13.1	10.9	7.7	11.0	11.7
March.....	14.3	12.8	14.5	14.8	9.6	12.2	13.7	12.8
April.....	9.4	13.3	9.2	11.5	15.4	8.5	8.5	5.9
May.....	12.4	15.2	17.6	12.4	10.6	13.9	10.2	8.8
June.....	13.3	13.9	12.8	13.9	14.7	11.9	10.2	13.0
July.....	11.7	12.7	10.5	12.3	8.9	10.4	9.7	5.3
August.....	14.4	14.8	16.2	11.5	14.0	12.1	12.2 ^r	9.6
September.....	15.7	13.1	11.6	12.3	12.6	11.9	10.0	11.4
October.....	12.3	11.1	12.6	15.0	10.5	9.8	10.4	8.2
November.....	11.7	16.3	14.1	12.6	10.5	12.0	11.0	10.2
December.....	10.8	10.7	9.6	11.4	14.3	12.5	10.4	7.5
Totals.....	161.5	162.2	155.2	153.7	144.8	137.9	126.8^r	112.4

Section 3.—Trade by Geographic Area

The tables in this Section provide information about Canada's exports and imports by geographic region and by country.

3.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1948-67

Item and Year	United Kingdom		Other Commonwealth and Preferential Countries		United States		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Domestic Exports	\$'000		\$'000		\$'000		\$'000	
1948.....	683,249	22.4	337,880	11.1	1,498,552	49.1	532,409	17.4
1949.....	702,074	23.6	309,214	10.4	1,504,788	50.6	458,913	15.4
1950.....	467,896	15.1	197,654	6.4	2,020,703	65.1	417,763	13.4
1951.....	630,124	16.2	260,889	6.7	2,296,235	58.9	709,834	18.2
1952.....	744,461	17.4	283,809	6.6	2,302,673	53.8	951,418	22.2
1953.....	662,785	16.2	244,745	6.0	2,413,318	58.9	776,263	18.9
1954.....	651,033	16.9	202,561	5.2	2,308,670	59.8	697,953	18.1
1955.....	767,642	18.0	248,624	5.9	2,547,636	59.8	694,426	16.3
1956.....	811,113	17.0	252,117	5.3	2,803,085	58.9	894,127	18.8
1957.....	720,898	15.1	240,016	5.0	2,846,646	59.4	981,320	20.5
1958.....	771,576	16.1	290,125	6.1	2,808,067	58.6	921,667	19.2
1959.....	785,302	15.7	281,462	5.6	3,083,151	61.4	871,257	17.3
1960.....	915,290	17.4	333,815	6.4	2,932,171	55.8	1,074,300	20.4
1961.....	909,344	15.8	328,854	5.7	3,107,176	54.0	1,409,612	24.5
1962.....	909,041	14.7	331,004	5.4	3,608,439	58.4	1,330,040	21.5
1963.....	1,006,838	14.8	391,526	5.8	3,766,380	55.4	1,633,785	24.0
1964.....	1,199,779	14.8	493,871	6.1	4,271,059	52.8	2,129,510	26.3
1965.....	1,174,309	13.8	502,330	5.9	4,840,456	56.8	2,007,984	23.6
1966.....	1,122,574	11.1	547,420	5.4	6,027,722	59.9	2,372,911	23.6
1967.....	1,169,053	10.5	638,201	5.8	7,079,396	63.7	2,224,930	20.0

3.—Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1948-67—concluded

Item and Year	United Kingdom		Other Commonwealth and Preferential Countries		United States		Other Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Imports	\$'000		\$'000		\$'000		\$'000	
1948.....	293,535	11.2	203,932	7.8	1,798,507	68.7	322,302	12.3
1949.....	302,420	11.1	186,306	6.9	1,915,227	70.6	310,072	11.4
1950.....	400,811	12.8	241,124	7.7	2,089,531	66.9	393,765	12.6
1951.....	415,194	10.4	306,287	7.6	2,752,087	68.7	531,371	13.3
1952.....	351,541	9.0	184,345	4.7	2,887,628	73.7	492,904	12.6
1953.....	445,441	10.5	170,224	4.0	3,115,301	73.3	516,842	12.2
1954.....	382,229	9.6	181,884	4.6	2,871,279	72.4	532,010	13.4
1955.....	393,117	8.6	209,265	4.6	3,331,143	72.9	634,229	13.9
1956.....	476,371	8.6	220,808	4.0	4,031,394	72.7	818,378	14.7
1957.....	507,319	9.3	239,054	4.4	3,887,391	71.0	839,582	15.3
1958.....	518,505	10.3	210,016	4.2	3,460,147	68.5	861,824	17.0
1959.....	588,573	10.7	241,241	4.4	3,709,065	67.3	970,042	17.6
1960.....	588,932	10.8	281,167	5.1	3,686,625	67.2	925,971	16.9
1961.....	618,221	10.7	292,155	5.1	3,863,968	67.0	994,233	17.2
1962.....	563,062	9.0	318,501	5.1	4,299,539	68.7	1,076,673	17.2
1963.....	526,800	8.0	400,820	6.1	4,444,556	67.8	1,186,033	18.1
1964.....	573,995	7.7	405,850	5.4	5,164,285	69.0	1,343,577	17.9
1965.....	619,058	7.2	372,780	4.3	6,044,831	70.0	1,596,480	18.5
1966.....	644,741	6.5	416,293	4.2	7,135,611	72.3	1,669,794	16.9
1967.....	673,050	6.1	435,291	3.9	8,016,341	72.4	1,950,517	17.6

4.—Trade of Canada by Leading Countries, 1967 with Comparable Figures for 1965 and 1966

Rank in—			Item and Country	1965	1966	1967
1965	1966	1967		\$'000	\$'000	\$'000
Domestic Exports						
1	1	1	United States.....	4,840,456	6,027,722	7,079,390
2	2	2	United Kingdom.....	1,174,309	1,122,574	1,169,050
3	3	3	Japan.....	316,187	393,892	572,159
5	6	4	Germany, Federal Republic.....	189,493	176,800	177,950
8	7	5	Netherlands.....	127,766	143,113	176,433
6	9	6	Australia.....	140,372	117,359	156,244
10	10	7	Italy.....	93,223	114,787	141,433
15	11	8	India.....	58,453	107,662	140,590
4	4	9	Union of Soviet Socialist Republics.....	197,362	320,605	128,660
7	8	10	Belgium and Luxembourg.....	128,011	117,505	100,800
9	5	11	China, Communist.....	105,131	184,879	91,300
12	12	12	Norway.....	82,456	107,014	87,420
14	14	13	Venezuela.....	73,045	75,958	82,040
11	13	14	France.....	87,273	84,541	80,600
13	15	15	Republic of South Africa.....	76,226	74,393	77,690
17	17	16	Mexico.....	51,006	52,145	49,200
16	16	17	Cuba.....	52,594	61,436	42,390
18	18	18	New Zealand.....	36,845	41,750	40,740
19	21	19	Spain.....	33,825	36,900	39,620
22	24	20	Jamaica.....	30,280	33,500	39,080
20	19	21	Argentina.....	32,720	39,529	33,380
27	26	22	Pakistan.....	21,643	25,671	33,180
26	23	23	Peru.....	21,864	36,355	32,340
23	22	24	Sweden.....	28,980	36,574	27,800
30	29	25	Brazil.....	17,509	21,157	27,540
29	30	26	Puerto Rico.....	17,693	19,560	26,770
21	20	27	Poland.....	31,565	37,404	25,760
25	31	28	Philippines.....	26,354	18,683	25,450
24	25	29	Switzerland.....	27,095	31,010	23,880
28	28	30	Trinidad and Tobago.....	21,532	23,337	20,110
Totals, 30 Leading Countries.....				8,141,268	9,683,815	10,749,000
Grand Totals, Domestic Exports.....				8,525,078	10,070,627	11,111,500

4.—Trade of Canada by Leading Countries, 1967 with Comparable Figures for 1965 and 1966—concluded

Rank in—			Item and Country	1965	1966	1967
1965	1966	1967				
			Imports	\$'000	\$'000	\$'000
1	1	1	United States.....	6,044,831	7,135,611	8,016,341
2	2	2	United Kingdom.....	619,058	644,741	673,050
3	3	3	Japan.....	230,144	253,051	304,768
4	5	4	Venezuela.....	254,670	215,059	276,327
5	4	5	Germany, Federal Republic.....	209,517	235,207	256,879
6	6	6	France.....	96,103	106,651	130,080
7	7	7	Italy.....	80,279	86,718	110,269
10	8	8	Sweden.....	55,568	72,541	76,242
12	12	9	Switzerland.....	43,986	50,279	66,022
9	10	10	Netherlands.....	56,274	60,489	64,783
8	9	11	Belgium and Luxembourg.....	72,027	61,555	64,620
11	11	12	Australia.....	47,372	59,573	64,471
14	17	13	Netherlands Antilles.....	43,341	38,511	60,293
21	16	14	Hong Kong.....	31,043	38,911	51,040
13	14	15	India.....	43,424	40,093	42,774
23	25	16	Republic of South Africa.....	27,113	27,641	37,060
30	15	17	Nigeria.....	11,252	39,490	36,560
19	21	18	Norway.....	33,641	33,774	33,761
20	20	19	Iran.....	31,765	35,469	33,229
17	18	20	Jamaica.....	36,000	37,281	31,860
18	19	21	Brazil.....	35,573	35,777	31,436
15	23	22	Saudi Arabia.....	42,114	32,553	30,967
24	24	23	Guyana.....	22,549	29,126	29,581
22	22	24	Mexico.....	27,247	33,539	29,535
28	27	25	Czechoslovakia.....	15,965	21,709	28,529
25	26	26	Denmark.....	20,071	24,181	27,055
29	28	27	China, Communist.....	14,445	20,594	25,074
34	35	28	Taiwan.....	9,333	13,089	23,569
33	38	29	Union of Soviet Socialist Republics.....	9,885	11,654	23,015
16	13	30	Malaysia.....	40,272	41,453	22,298
Totals, 30 Leading Countries.....				8,304,862	9,536,320	10,701,488
Grand Totals, Imports.....				8,633,148	9,866,439	11,075,199

5.—Value of Domestic Exports, by Geographic Region and Country, 1960-67

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe—								
United Kingdom.....	915,290	909,344	909,041	1,006,838	1,199,779	1,174,309	1,122,574	1,169,053
Gibraltar.....	200	291	149	185	110	60	113	41
Ireland.....	7,706	11,588	10,329	10,461	15,072	16,664	14,948	15,645
Malta and Gozo.....	2,299	2,924	2,217	2,313	2,721	1,964	1,643	1,351
Austria.....	7,745	7,877	7,316	6,826	7,475	9,857	11,600	7,810
Belgium and Luxembourg.....	69,131	76,055	68,169	76,493	100,535	128,011	117,505	100,800
Denmark.....	4,978	4,813	6,087	6,811	7,484	9,176	10,802	15,730
Finland.....	4,355	6,085	5,240	7,277	4,458	4,792	7,078	4,661
France.....	72,907	71,923	57,561	63,428	79,433	87,273	84,541	80,608
Germany, Federal Republic.....	165,597	188,694	177,688	170,969	211,360	189,493	176,800	177,955
Greece.....	5,546	4,995	9,235	7,429	8,013	8,231	9,647	8,629
Iceland.....	243	219	287	347	10,459	10,228	6,492	738
Italy.....	68,393	67,688	74,521	76,761	62,236	93,223	114,787	141,439
Netherlands.....	62,554	61,297	76,940	87,009	101,582	127,766	143,113	176,431
Norway.....	61,595	69,744	69,054	73,398	67,582	82,456	107,014	87,424
Portugal.....	3,336	4,718	2,563	5,850	6,264	5,260	5,228	7,138
Spain.....	10,243	12,803	15,416	20,500	21,235	33,825	36,900	39,623
Sweden.....	20,906	17,654	18,230	20,926	29,922	28,980	36,574	27,808
Switzerland.....	26,404	22,422	23,891	27,247	28,502	27,095	31,010	23,833
Totals, Commonwealth and Preferential Countries.....	925,496	924,147	921,736	1,019,797	1,217,683	1,192,996	1,139,278	1,186,089
Totals, Other Countries.....	583,932	616,986	612,198	651,279	746,540	845,666	899,092	900,628
Totals, Western Europe	1,509,428	1,541,133	1,533,934	1,671,076	1,964,223	2,038,663	2,038,369	2,086,718

5.—Value of Domestic Exports, by Geographic Region and Country, 1960-67—continued

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Eastern Europe—								
Albania.....	1	5,845	3,053	2	10,873	9,471	7,562	5,705
Bulgaria.....	491	277	388	28	19,239	7,364	7,812	37
Czechoslovakia.....	6,767	32,654	3,522	13,289	54,230	34,762	5,080	10,970
Germany, Eastern.....	994	17,972	148	1,262	11,739	15,216	12,311	5,516
Hungary.....	931	564	350	374	1,910	8,352	3,293	3,500
Poland.....	16,665	36,819	37,391	27,200	62,653	31,565	37,404	25,790
Romania.....	1,326	1,037	514	1,275	540	641	685	345
Union of Soviet Socialist Republics.....	8,233	24,276	3,297	150,123	315,943	197,362	320,605	128,663
Yugoslavia.....	3,249	2,135	999	17,519	5,443	8,561	3,664	3,484
Totals, Eastern Europe..	38,658	121,579	49,662	211,071	482,568	313,294	398,415	184,011
Middle East—								
Aden.....	2	2	2	2	2	193	218	404
Bahrain.....	112	111	210	162	151	160	331	82
Cyprus.....	609	70	298	513	193	261	328	307
Qatar.....	55	72	213	246	279	548	409	201
Trucial States.....	2	2	2	2	2	66	152	182
British Middle East, <i>n.e.s.</i>	61	165	159	127	138	3	3	3
Ethiopia.....	220	120	105	139	236	581	842	498
Iran.....	2,499	4,457	5,293	3,568	3,372	3,282	3,795	3,055
Iraq.....	2,425	1,374	1,343	3,376	957	734	887	625
Israel.....	6,184	8,747	6,232	8,163	9,109	6,261	10,703	6,565
Jordan.....	131	308	145	244	245	306	429	411
Kuwait.....	1,091 ⁴	941 ⁴	1,040 ⁴	2,748	934	3,582	3,994	2,890
Lebanon.....	3,443	2,484	2,244	2,365	2,516	2,419	3,134	2,497
Libya.....	333	151	376	690	907	660	695	1,131
Saudi Arabia.....	2,905	2,697	3,257	3,548	3,133	5,343	5,034	3,636
Somalia.....	2	12	3	22	1	26	8	3
Sudan.....	335	333	180	173	113	120	363	898
Syria.....	674	364	561	713	387	665	555	511
Turkey.....	2,014	1,943	978	2,378	1,581	3,468	4,781	5,014
United Arab Republic—Egypt	2,010	3,025	2,230	2,536	3,978	4,772	5,330	931
Totals, Commonwealth and Preferential Countries.....	1,927⁴	1,360⁴	1,920⁴	1,048	760	1,227	1,438	1,156
Totals, Other Countries.....	23,176	26,013	22,945	30,662	27,468	32,218	40,551	28,665
Totals, Middle East.....	25,103	27,373	24,866	31,710	28,229	33,416	41,989	29,821
Other Africa—								
Gambia.....	6	6	6	212	71	162	163	171
Ghana.....	3,879	7,798	8,400	5,451	7,333	5,723	3,994	4,384
Kenya.....	936	586	680	1,003	911	4,605	1,653	2,114
Malawi.....	7	7	7	7	7	90	143	317
Mauritius and Dependencies.....	77	95	94	218	94	236	135	200
Nigeria.....	2,305	3,272	6,997	3,234	6,292	6,934	10,108	3,700
Northern Rhodesia.....	8	8	8	826	1,031	9	9	10
Nyasaland.....	8	8	8	99	156	10	10	10
Republic of South Africa.....	52,655	37,819	37,525	60,299	69,166	76,226	74,393	77,690
Rhodesia.....	11	11	11	11	11	3,841	603	95
Rhodesia and Nyasaland.....	4,088	3,396	3,367	19	19	13	13	13
Sierra Leone.....	641	810	1,200	1,298	1,329	1,134	1,743	724
Southern Rhodesia.....	8	8	8	3,637	3,150	14	14	14
Tanganyika.....	143	173	228	377	192	18	18	18
Tanzania.....	16	16	16	16	16	316	2,039	3,229
Uganda.....	86	66	137	148	259	1,167	521	364
Zambia.....	17	17	17	17	17	4,279	1,384	4,082
British Africa, <i>n.e.s.</i>	200	156	161	52	31	35	13	14
Algeria.....	4,662	6,064	2,202	3,970	1,212	228	965	2,674
Angola.....	67	160	44	104	75	228	315	222
Cameroon Republic.....	18	18	92	24	39	157	199	249

¹ Less than \$500.² Included with British Middle East, *n.e.s.*³ See Aden and Trucial States.⁴ Included with "Totals, Commonwealth and Preferential Countries".⁵ Includes Kuwait.⁶ Included with British Africa, *n.e.s.*⁷ Formerly Nyasaland.⁸ Included with Rhodesia and Nyasaland.⁹ See Zambia.¹⁰ See Malawi.¹¹ Formerly Southern Rhodesia.¹² See Northern Rhodesia.¹³ See Southern Rhodesia and Nyasaland.¹⁴ See Zambia, Rhodesia and Malawi.¹⁵ See Rhodesia.¹⁶ See Tanzania.¹⁷ Formerly Tanganyika.¹⁸ Formerly Northern Rhodesia.¹⁹ Included with French Africa, *n.e.s.*

5.—Value of Domestic Exports, by Geographic Region and Country, 1960-67—continued

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Africa—concluded								
Congo (Kinshasa).....	1,310	980	889	921	1,127	872	956	586
Dahomey.....	1	1	1	1	1	1	1	120
French Equatorial Africa.....	34	57	5	1	1	1	1	1
French West Africa.....	135	73	775	1	1	1	1	1
Guinea, Republic of.....	10	26	9	92	214	226	461	291
Gabon Republic.....	1	19	61	15	146	31	294	560
Ivory Coast.....	9	140	131	1	4	81	728	42
Liberia.....	1	26	10	18	66	49	88	246
Malagasy Republic.....	644	501	816	1,100	5,518	1,908	1,344	1,349
Mauritania.....	1	1	1	1	1	108	45	32
Morocco.....	627	476	459	258	169	657	123	114
Mozambique.....	3,145	2,023	2,504	2,646	1,806	3,282	1,280	3,725
Portuguese Africa, n.e.s.....	279	241	197	283	164	367	171	1,871
Senegal.....	1	1	1	1	1	1	1	109
Spanish Africa.....	28	40	118	27	229	112	85	1,314
Togo.....	1	1	105	350	443	317	585	135
Tunisia.....	170	561	30	1,970	327	86	196	354
Totals, Commonwealth and Preferential Countries.....	65,010	51,172	58,790	76,853	90,012	104,748	96,894	97,084
Totals, Other Countries.....	11,121	11,385	8,449	12,738	12,207	9,101	8,131	14,085
Totals, Other Africa.....	76,130	63,558	67,239	89,591	102,219	113,849	105,024	111,169
Other Asia—								
Ceylon.....	2,479	3,799	2,007	2,636	4,724	2,199	5,250	9,027
Hong Kong.....	21,665	19,604	14,283	17,490	22,278	16,734	15,385	17,349
India.....	36,814	42,885	29,633	53,900	64,042	58,453	107,662	140,592
Malaysia.....	4,660	5,696	5,453	6,999	8,370	9,253	15,376	13,445
Pakistan.....	11,942	15,315	10,755	19,152	20,031	21,643	25,671	33,181
Singapore.....	4	4	4	4	4	4	4	2,868
British East Indies, n.e.s.....	360	457	435	4	4	4	4	4
Afghanistan.....	159	55	25	18	23	23	18	799
Burma.....	806	1,405	1,303	703	736	671	1,195	262
Cambodia and Laos.....	148	114	2	17	9	128	98	63
China, Communist.....	8,737	125,448	147,438	104,738	136,283	105,131	184,879	91,306
Indonesia.....	2,110	2,463	2,027	1,449	703	1,636	347	2,771
Japan.....	178,859	231,574	214,535	296,010	330,234	316,197	393,892	572,156
Korea, South.....	3,916	2,067	1,492	3,815	1,096	823	15,652	7,671
Philippines.....	14,809	15,645	18,545	21,284	27,809	26,354	18,683	25,458
Portuguese Asia.....	93	59	22	38	41	48	60	48
Portuguese India.....	385	445	5	5	5	5	5	5
Taiwan (Republic of China)....	2,886	2,219	4,387	3,759	6,178	6,577	8,410	12,267
Thailand.....	2,710	2,921	3,472	2,823	3,803	5,621	6,742	6,947
Viet-Nam.....	540	206	298	250	726	804	2,589	1,939
Totals, Commonwealth and Preferential Countries.....	77,920	87,755	62,566	100,176	119,445	108,282	169,344	216,461
Totals, Other Countries.....	216,159	384,622	393,546	434,903	507,623	464,002	632,565	721,687
Totals, Other Asia.....	291,079	472,376	456,112	535,079	627,068	572,284	801,909	938,148
Oceania—								
Australia.....	98,862	78,628	104,965	100,773	145,812	140,372	117,359	156,249
Fiji.....	808	607	705	759	891	1,115	829	875
New Zealand.....	23,858	31,125	26,784	30,549	33,714	36,345	41,750	40,742
British Oceania, n.e.s.....	324	191	296	249	386	317	304	205
French Oceania.....	313	303	366	299	436	508	614	1,149
United States Oceania.....	640	1,293	3,084	3,693	1,261	828	740	764
Totals, Commonwealth and Preferential Countries.....	123,852	110,551	132,750	132,330	180,804	178,650	160,241	198,071
Totals, Other Countries.....	953	1,596	3,451	3,992	1,697	1,336	1,354	1,914
Totals, Oceania.....	124,805	112,147	136,201	136,322	182,501	179,986	161,595	199,985

1 Included with French Africa, n.e.s.

2 Less than \$500.

3 Included with French West Africa

4 Included with Malaysia.

5 Included with India.

5.—Value of Domestic Exports, by Geographic Region and Country, 1960-67—concluded

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
South America—								
Falkland Islands.....	169	24	13	6	1	4	9	133
Guyana.....	7,428	5,272	5,102	5,061	7,116	7,750	9,878	12,132
Argentina.....	19,364	30,893	22,546	30,992	26,889	32,720	39,529	33,380
Bolivia.....	323	353	363	628	985	1,687	2,126	2,233
Brazil.....	19,755	30,076	28,481	29,432	22,985	17,509	21,157	27,540
Chile.....	6,575	8,225	13,278	12,329	12,659	10,514	12,316	17,747
Colombia.....	16,590	19,525	19,887	23,348	21,252	17,362	25,397	18,199
Ecuador.....	3,913	3,922	3,777	3,913	5,719	4,672	3,028	3,093
French Guiana.....	2	15	5	2	4	54	18	58
Paraguay.....	120	69	41	211	485	177	129	114
Peru.....	8,891	8,188	8,140	11,641	10,749	21,864	36,355	32,344
Surinam.....	883	1,224	866	1,031	1,610	1,283	1,834	1,238
Uruguay.....	2,423	3,039	3,151	2,994	5,679	3,283	4,779	2,952
Venezuela.....	35,345	34,978	42,328	46,328	64,075	73,045	75,958	82,049
Totals, Commonwealth and Preferential Countries.....	7,597	5,296	5,115	5,067	7,117	7,754	9,887	12,265
Totals, Other Countries.....	114,184	140,507	142,863	168,848	173,090	184,168	222,626	220,927
Totals, South America ..	121,780	145,803	147,978	173,915	180,207	191,922	232,512	233,192
Central America and Antilles—								
Bahamas.....	3,357	3,798	5,010	6,133	8,876	9,257	10,847	10,245
Barbados.....	3,775	3,977	4,481	5,469	6,922	6,826	8,112	8,417
Bermuda.....	4,016	4,239	4,492	5,713	6,839	5,984	7,442	7,372
British Honduras.....	409	600	835	698	973	1,065	921	1,179
Jamaica.....	18,056	19,077	21,891	22,271	28,942	30,280	33,560	39,080
Leeward and Windward Islands	4,720	4,828	5,642	6,596	7,986	8,037	8,753	9,719
Trinidad and Tobago.....	12,971	18,398	14,817	16,213	17,791	21,532	23,337	20,115
Costa Rica.....	2,983	2,931	3,473	3,651	3,841	5,397	5,130	4,173
Cuba.....	13,038	31,104	10,878	16,433	60,930	52,594	61,436	42,390
Dominican Republic.....	5,062	4,469	8,488	9,085	9,070	6,152	6,824	4,710
El Salvador.....	2,390	2,436	3,354	3,134	4,416	4,051	3,294	4,470
French West Indies.....	43	75	53	66	135	144	157	225
Guatemala.....	2,106	2,188	2,705	3,107	3,433	4,001	3,254	2,921
Haiti, Republic of.....	1,529	1,543	1,277	1,525	1,485	1,302	1,228	1,124
Honduras, Republic of.....	1,416	1,061	899	1,100	1,260	1,005	1,445	1,086
Mexico.....	38,023	38,529	41,267	55,572	65,151	51,006	52,145	49,202
Netherlands Antilles.....	1,131	1,239	1,793	2,406	2,355	3,004	3,008	3,683
Nicaragua.....	1,319	1,448	2,135	2,693	2,209	2,805	3,070	2,820
Panama.....	3,703	4,578	5,645	4,417	4,602	4,622	5,444	4,659
Puerto Rico.....	11,172	13,109	12,711	14,619	15,408	17,693	19,560	26,772
United States Virgin Islands..	214	190	283	284	1,317	1,571	950	836
Totals, Commonwealth and Preferential Countries.....	47,304	54,917	57,167	63,093	77,829	82,981	92,913	96,127
Totals, Other Countries.....	84,127	104,900	94,961	118,092	175,612	155,348	166,944	149,071
Totals, Central America and Antilles.....	131,431	159,818	152,129	181,185	253,441	238,329	259,856	245,198
North America—								
Greenland.....	427	198	167	287	272	137	156	480
St. Pierre and Miquelon.....	1,563	1,825	1,799	1,913	2,431	2,713	3,070	3,461
United States.....	2,932,171	3,107,176	3,608,439	3,766,380	4,271,059	4,840,456	6,027,722	7,079,396
Totals, North America ..	2,934,162	3,109,199	3,610,404	3,768,580	4,273,762	4,843,307	6,030,957	7,083,337
Grand Totals, Common- wealth and Preferential Countries.....	1,249,104	1,238,198	1,240,045	1,398,364	1,693,650	1,676,638	1,669,994	1,807,254
Grand Totals, Other Coun- tries.....	4,066,470	4,516,788	4,938,479	5,400,165	6,400,569	6,848,440	8,400,633	9,304,326
Grand Totals, All Countries	5,255,575	5,754,986	6,178,523	6,798,529	8,094,219	8,525,078	10,070,627	11,111,680

6.—Value of Imports, by Geographic Region and Country, 1960-67

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe—								
United Kingdom.....	588,932	618,221	563,062	526,800	573,995	619,058	644,741	673,050
Gibraltar.....	2	1	—	—	13	2	1	1
Ireland.....	2,098	3,806	4,826	5,320	5,624	6,891	6,512	8,986
Malta and Gozo.....	22	25	36	232	113	387	394	617
Austria.....	6,605	6,636	7,971	9,026	9,595	12,281	15,192	19,715
Belgium and Luxembourg.....	41,401	44,780	48,672	47,342	59,198	72,027	61,555	64,620
Denmark.....	9,962	11,650	13,273	13,209	15,749	20,071	24,181	27,055
Finland.....	1,053	1,215	1,939	2,520	3,177	2,762	3,533	3,296
France.....	50,121	54,280	56,160	58,170	68,687	96,103	106,651	130,080
Germany, Federal Republic....	126,988	136,530	141,198	144,023	170,392	209,517	235,207	256,879
Greece.....	538	545	1,094	1,631	1,550	1,338	1,831	3,521
Iceland.....	15	707	1,183	696	2	659	509	452
Italy.....	42,843	49,140	51,859	55,303	67,462	80,279	86,718	110,289
Netherlands.....	31,456	33,493	37,049	36,736	39,933	56,274	60,489	64,783
Norway.....	4,248	8,965	16,109	23,492	27,335	33,641	33,774	33,761
Portugal.....	3,208	4,917	5,998	7,713	9,414	11,053	13,288	14,437
Spain.....	6,947	8,543	8,463	8,496	11,704	13,280	12,505	17,093
Sweden.....	20,409	24,221	25,873	33,410	38,794	55,568	72,641	76,242
Switzerland.....	24,343	26,102	28,040	32,469	36,932	43,986	50,279	66,022
Totals, Commonwealth and Preferential Countries.....	591,054	622,053	567,924	532,352	579,746	626,307	651,648	682,653
Totals, Other Countries.....	370,138	411,722	444,887	474,236	559,924	709,338	778,252	888,223
Totals, Western Europe..	961,191	1,033,775	1,012,811	1,006,588	1,139,670	1,335,646	1,429,900	1,570,877
Eastern Europe—								
Albania.....	1	—	—	—	—	1	—	4
Bulgaria.....	6	24	34	74	114	526	768	1,308
Czechoslovakia.....	6,654	8,405	9,033	9,204	12,847	15,965	21,709	28,529
Germany, Eastern.....	877	970	881	1,207	1,473	1,584	2,163	3,291
Hungary.....	338	393	417	557	761	1,608	3,309	6,542
Poland.....	1,871	3,194	4,792	6,788	9,280	11,815	13,757	14,982
Romania.....	84	261	61	124	82	238	569	1,003
Union of Soviet Socialist Republics.....	3,210	2,746	1,777	2,313	2,808	9,885	11,654	23,015
Yugoslavia.....	804	1,665	1,801	1,843	2,601	2,967	2,638	3,754
Totals, Eastern Europe...	13,844	17,659	18,795	22,109	29,966	44,588	56,566	82,426
Middle East—								
Aden.....	2	2	2	2	2	353	80	15
Bahrain.....	—	1	—	1	—	—	—	—
Cyprus.....	180	194	151	88	48	291	108	306
Qatar.....	8,434	8,724	6,273	8,678	2,285	2,732	—	27
Trucial States.....	2	2	2	2	2	1,741	2,984	1
British Middle East, <i>n.e.s.</i>	59	48	68	56	3,183	2	2	2
Ethiopia.....	43	4	5	21	141	66	63	90
Iran.....	30,740	21,622	31,736	42,799	31,085	31,765	35,469	33,229
Iraq.....	722	846	704	1,269	2,379	5,284	12,529	9,413
Israel.....	2,372	3,106	5,646	6,043	6,270	6,656	6,758	9,210
Jordan.....	1	3	1	3	10	9	7	20
Kuwait.....	22,303 ¹	20,225 ¹	10,034 ¹	5,169	11,219	11,505	6,157	2,287
Lebanon.....	33	23	58	65	81	50	1,040	104
Oman.....	1	10	—	—	—	1	10,963	11,263
Saudi Arabia.....	37,402	41,393	40,551	50,290	18,553	42,114	32,553	30,967
Somalia.....	—	1	—	1	1	—	24	—
Sudan.....	83	76	105	148	113	138	93	123
Syria.....	127	263	455	362	492	515	380	61
Turkey.....	855	859	1,472	1,294	1,207	1,055	979	1,480
United Arab Republic—Egypt.....	846	474	301	224	125	221	661	258
Totals, Commonwealth and Preferential Countries.....	30,975²	29,192²	16,525²	8,823	5,516	5,118	3,171	348
Totals, Other Countries.....	73,224	68,668	81,044	107,688	71,675	99,379	107,676	98,506
Totals, Middle East.....	104,200	97,861	97,569	116,511	77,191	104,496	110,848	98,854

¹ Less than \$500.
² Included with "Totals, Commonwealth and Preferential Countries".

³ See Aden and Trucial States.
⁴ Includes Kuwait.

6.—Value of Imports, by Geographic Region and Country, 1960-67—continued

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Africa—								
Ghana.....	3,127	4,691	7,036	6,533	7,961	10,158	10,824	7,950
Kenya.....	2,561	3,629	3,157	5,323	7,397	6,862	7,206	7,409
Malawi.....	1	1	1	1	1	391	583	647
Mauritius and Dependencies.....	2,100	5,600	5,215	8,606	13,394	6,456	5,131	2,919
Nigeria.....	4,358	3,504	5,726	7,924	11,264	11,252	39,490	36,560
Northern Rhodesia.....	2	2	2	1,306	37	3	3	3
Nyasaland.....	2	2	2	408	297	4	4	4
Republic of South Africa.....	11,482	12,202	16,952	31,548	28,777	27,113	27,641	37,060
Rhodesia.....	5	5	5	5	5	3,408	1,175	4
Rhodesia and Nyasaland.....	981	1,318	3,272	6	6	7	7	7
Sierra Leone.....	5	8	22	5	3	311	66	3
Southern Rhodesia.....	2	2	2	6,320	4,279	8	8	8
Tanganyika.....	1,834	2,139	2,173	7,315	9,061	9	9	9
Tanzania.....	10	10	10	10	10	6,907	7,065	6,469
Uganda.....	1,277	2,325	2,213	3,144	4,582	6,800	5,862	9,719
Zambia.....	11	11	11	11	11	2	8	21
British Africa, <i>n.e.s.</i>	5	53	7	4	3	4	8	3
Algeria.....	161	162	509	458	61	98	47	245
Angola.....	209	136	122	728	1,297	1,415	3,095	5,924
Cameroun Republic.....	12	12	15	147	43	121	57	106
Congo (Kinshasa).....	1,781	1,314	1,320	1,921	1,911	1,661	1,081	1,374
Dahomey.....	12	12	12	12	12	12	12	5
French Equatorial Africa.....	185	27	8	12	12	12	12	12
French West Africa.....	270	1	13	12	12	12	12	12
French Africa, <i>n.e.s.</i>	33	29	17	310	1,263	68	542	31
Gabon Republic.....	12	658	1,123	859	687	274	1,064	317
Guinea, Republic of.....	2,794	4,824	896	2,501	1,707	1,066	2,088	2,265
Ivory Coast.....	12	788	244	227	623	247	814	700
Liberia.....	8	144	40	106	327	208	63	365
Malagasy Republic.....	12	12	12	12	12	668	538	250
Mauritania.....	14	14	14	12	12	12	12	12
Morocco.....	222	164	487	540	1,162	278	1,406	2,465
Mozambique.....	1	30	139	395	431	633	515	735
Portuguese Africa, <i>n.e.s.</i>	—	—	13	—	—	—	—	13
Senegal.....	12	12	12	12	12	12	12	12
Spanish Africa.....	2	17	23	39	22	6	2	4
Togo.....	12	12	—	—	—	6	—	1
Tunisia.....	62	32	17	2	19	19	12	512
Totals, Commonwealth and Preferential Countries.....	27,729	35,469	45,772	78,433	87,055	79,664	105,060	108,764
Totals, Other Countries.....	5,728	8,327	4,962	8,234	9,553	6,767	11,323	15,325
Totals, Other Africa.....	33,456	43,796	50,734	86,667	96,608	86,431	116,383	124,089
Other Asia—								
Ceylon.....	15,556	16,516	14,763	14,642	13,413	14,049	10,045	12,155
Hong Kong.....	15,534	14,143	18,889	21,197	26,321	31,043	38,911	51,040
India.....	29,352	33,465	43,479	52,664	36,121	43,424	40,093	42,774
Malaysia.....	28,120	23,597	27,740	31,634	34,566	40,272	41,453	22,298
Pakistan.....	985	2,367	2,561	2,270	4,211	3,654	4,287	4,441
Singapore.....	15	15	15	15	15	15	15	11,173
British East Indies, <i>n.e.s.</i>	261	297	511	15	15	15	15	15
Afghanistan.....	—	13	—	—	—	—	15	13
Burma.....	85	30	50	102	276	39	106	105
Cambodia and Laos.....	17	2	—	—	—	—	—	3
China, Communist.....	5,638	3,233	4,521	5,147	9,420	14,445	20,594	25,074
Indonesia.....	529	290	173	152	1,393	2,365	1,158	1,066
Japan.....	110,382	116,607	125,359	130,471	174,388	230,144	253,051	304,768
Korea, North.....	16	16	16	16	16	16	16	2
Korea, South.....	404	76	99	380	473	1,468	1,764	4,568
Philippines.....	1,966	1,517	1,447	2,007	2,970	3,583	3,344	3,066
Portuguese Asia.....	—	—	77	428	1,204	2,069	33	27
Taiwan (Republic of China).....	1,150	1,856	2,910	5,875	9,063	9,333	13,089	23,569
Thailand.....	842	582	1,031	582	582	899	2,431	4,868

¹ Formerly Nyasaland.² Included with Rhodesia and Nyasaland.³ See Zambia.⁴ SeeMalawi. ⁵ Formerly Southern Rhodesia. ⁶ See Northern Rhodesia, Southern Rhodesia and Nyasaland.⁷ See Zambia, Rhodesia and Malawi. ⁸ See Rhodesia. ⁹ See Tanzania. ¹⁰ Formerly Tanganyika.¹¹ Formerly Northern Rhodesia. ¹² Included with French Africa, *n.e.s.*¹³ Less than \$500. ¹⁴ Included with French West Africa. ¹⁵ Included with Malaysia. ¹⁶ Included with Korea, South.

6.—Value of Imports, by Geographic Region and Country, 1960-67—continued

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Asia—concluded								
Viet-Nam.....	5	9	7	1	4	2	1	6
Totals, Commonwealth and Preferential Countries.....	89,807	90,384	107,943	122,407	114,633	132,443	134,788	143,880
Totals, Other Countries.....	121,020	124,202	135,673	145,145	199,772	264,347	295,586	367,122
Totals, Other Asia.....	210,827	214,586	243,616	267,552	314,405	396,790	430,375	511,002
Oceania—								
Australia.....	35,508	36,649	45,216	55,650	59,827	47,372	59,573	64,471
Fiji.....	6,481	2,512	3,144	8,588	7,401	4,801	2,724	3,754
New Zealand.....	10,099	10,546	12,005	14,067	14,076	14,870	14,972	15,270
British Oceania, <i>n.e.s.</i>	—	1	—	5	6	—	1	3
French Oceania.....	—	40	—	1	3,559	5,092	6,612	6,116
United States Oceania.....	21	55	214	27	28	138	86	128
Totals, Commonwealth and Preferential Countries.....	52,087	49,706	60,365	78,310	81,310	67,044	77,270	83,498
Totals, Other Countries.....	21	96	214	27	3,586	5,229	6,698	6,244
Totals, Oceania.....	52,109	49,802	60,578	78,338	84,896	72,273	83,968	89,742
South America—								
Falkland Islands.....	8	8	—	—	—	—	—	2
Guyana.....	18,921	23,030	23,375	31,334	35,653	22,549	29,126	29,581
Argentina.....	3,611	3,399	5,649	5,352	5,938	5,400	4,882	5,183
Bolivia.....	443	883	957	70	289	384	175	56
Brazil.....	24,883	29,081	31,600	36,361	39,533	35,573	35,777	31,436
Chile.....	747	1,217	1,117	1,271	1,755	1,713	1,891	1,746
Colombia.....	12,784	13,023	15,658	13,576	14,889	16,812	11,619	13,384
Ecuador.....	11,018	7,682	8,611	7,625	9,353	8,546	7,873	8,129
French Guiana.....	—	—	—	1	—	—	18	138
Paraguay.....	760	874	378	831	547	455	477	668
Peru.....	3,037	4,233	3,225	3,770	7,792	9,063	3,517	2,276
Surinam.....	4,156	3,482	4,067	6,158	6,975	8,702	8,150	8,156
Uruguay.....	987	1,834	793	868	968	975	477	401
Venezuela.....	195,189	216,640	224,275	243,495	270,621	254,670	215,059	276,327
Totals, Commonwealth and Preferential Countries.....	18,929	23,038	23,375	31,334	35,653	22,549	29,126	29,583
Totals, Other Countries.....	257,615	282,349	296,329	319,379	358,664	342,283	289,916	347,904
Totals, South America.....	276,544	305,387	319,703	350,714	394,317	364,832	319,041	377,487
Central America and Antilles—								
Bahamas.....	2,614	484	217	426	412	533	1,214	2,221
Barbados.....	2,417	4,980	3,170	3,954	3,851	3,041	2,277	3,119
Bermuda.....	701	224	136	262	190	403	727	326
British Honduras.....	91	701	629	1,720	1,858	1,235	1,479	1,920
Jamaica.....	37,688	38,511	39,721	51,524	47,853	36,000	37,281	31,860
Leeward and Windward Islands	1,496	1,261	1,686	2,202	1,026	832	943	1,420
Trinidad and Tobago.....	14,512	14,375	14,100	15,871	20,738	16,670	16,050	18,750
Costa Rica.....	4,345	4,227	6,259	7,308	8,363	6,715	6,458	7,276
Cuba.....	7,243	5,034	2,803	13,041	3,464	5,304	5,629	6,319
Dominican Republic.....	1,586	1,269	1,912	2,281	5,093	2,050	1,311	957
El Salvador.....	829	1,307	1,848	1,960	3,356	2,696	2,110	2,022
French West Indies.....	28	426	326	278	263	552	48	30
Guatemala.....	3,256	2,636	1,796	2,557	2,422	2,879	2,686	2,484
Haiti, Republic of.....	982	810	566	1,159	2,056	1,076	944	930
Honduras, Republic of.....	3,352	7,391	7,617	6,868	7,670	10,193	11,440	11,668
Mexico.....	21,007	18,193	24,416	23,734	23,186	27,247	33,539	29,535
Netherlands Antilles.....	32,521	31,137	35,856	35,999	34,885	43,341	38,511	60,293
Nicaragua.....	170	208	107	383	727	247	437	1,878
Panama.....	6,066	6,168	8,321	11,057	15,095	19,414	16,066	14,798
Puerto Rico.....	2,904	2,359	2,713	2,399	3,554	2,759	4,404	6,210
United States Virgin Islands.....	32	1	1	1	3	—	4	4

1 Less than \$500.

6.—Value of Imports, by Geographic Region and Country, 1960-67—concluded

Region and Country	1960	1961	1962	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Central America and Antilles—concluded								
Totals, Commonwealth and Preferential Countries.....	59,518	60,535	59,658	75,960	75,933	58,714	59,971	59,616
Totals, Other Countries.....	84,322	81,067	94,541	109,025	110,137	124,471	123,586	144,419
Totals, Central America and Antilles.....	143,839	141,603	154,199	184,985	186,070	183,185	183,557	204,034
North America—								
Greenland.....	1	102	111	106	110	—	16	256
St. Pierre and Miquelon.....	60	42	118	84	189	76	174	91
United States.....	3,686,625	3,863,968	4,299,539	4,444,556	5,164,285	6,044,831	7,135,611	8,016,341
Totals, North America.....	3,686,685	3,864,111	4,299,769	4,444,746	5,164,585	6,044,907	7,135,801	8,016,688
Grand Totals, Commonwealth and Preferential Countries.....	870,099	910,377	881,563	927,620	979,845	991,838	1,061,035	1,108,342
Grand Totals, Other Countries.....	4,612,597	4,858,201	5,376,213	5,630,589	6,507,862	7,641,310	8,805,405	9,966,857
Grand Totals, All Countries.....	5,482,695	5,768,578	6,257,776	6,558,209	7,487,707	8,633,148	9,866,439	11,075,199

¹ Less than \$500.

The proportion of imports subject to duty varies widely between countries and geographic areas. Generally, the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average ad valorem rates of duty charged on their goods than is the case with countries supplying chiefly natural products. Variations in the proportion of imports dutiable as between different countries or in the average ad valorem rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries. There are, in the main, three sets of tariff rates in operation in Canada: Commonwealth Preferential, Most-Favoured-Nation, and General Tariff (see p. 1022).

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1965-67

Region and Country	1965			1966			1967		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Western Europe.....	791,381	544,262	1,335,646	848,353	581,548	1,429,900	917,030	653,847	1,570,877
United Kingdom.....	249,545	369,513	619,058	271,759	372,982	644,741	275,170	397,880	673,050
Austria.....	11,194	1,087	12,281	13,840	1,352	15,192	11,575	8,140	19,715
Belgium and Luxembourg.....	57,736	14,291	72,027	45,963	15,591	61,555	45,631	18,988	64,620
Denmark.....	13,380	6,691	20,071	16,563	7,618	24,181	18,891	8,164	27,055
France.....	79,208	16,894	96,103	78,256	28,400	106,651	86,140	43,940	130,080
Germany, Federal Republic.....	162,345	47,171	209,517	174,886	60,321	235,207	188,885	67,995	256,879
Italy.....	72,089	8,190	80,279	77,939	8,779	86,718	99,224	11,045	110,269
Netherlands.....	42,845	13,428	56,274	45,805	14,684	60,489	47,986	16,796	64,783
Norway.....	9,642	23,909	33,641	12,239	21,535	33,774	10,187	23,573	33,761
Spain.....	6,449	6,830	13,280	7,229	5,276	12,505	10,926	6,168	17,093
Sweden.....	36,935	18,634	55,568	49,801	22,739	72,541	50,465	25,777	76,242
Switzerland.....	32,738	11,248	43,986	35,702	14,577	50,279	48,216	17,806	66,022
Eastern Europe.....	35,245	9,344	44,588	46,937	9,628	56,566	63,662	18,764	82,426
Czechoslovakia.....	15,097	868	15,965	21,119	589	21,709	27,115	1,414	28,529
Poland.....	11,329	486	11,815	13,397	360	13,757	14,201	781	14,982
Union of Soviet Socialist Republics.....	2,959	6,926	9,885	3,787	7,867	11,654	7,864	15,151	23,015

7.—Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1965-67—concluded

Region and Country	1965			1966			1967		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Middle East	5,242	99,255	104,496	5,387	105,461	110,848	6,898	91,956	98,854
Cyprus.....	107	185	291	71	37	108	86	219	306
Qatar.....	—	2,732	2,732	—	—	—	—	27	27
Iran.....	630	31,135	31,765	587	34,882	35,469	825	32,404	33,229
Iraq.....	82	5,202	5,284	75	12,454	12,529	114	9,299	9,413
Israel.....	3,164	3,491	6,656	3,015	3,743	6,758	4,467	4,743	9,210
Kuwait.....	—	11,498	11,505	202	5,955	6,157	—	2,287	2,287
Libya.....	1	1	1	1	10,962	10,963	—	11,263	11,263
Saudi Arabia.....	1	42,113	42,113	—	32,553	32,553	22	30,944	30,967
Other Africa	27,923	58,508	86,431	22,242	94,141	116,383	31,628	92,461	124,089
Angola.....	462	953	1,415	908	2,191	3,095	1,185	4,738	5,924
Ghana.....	3,465	6,693	10,158	1,056	9,769	10,824	1,992	5,958	7,950
Kenya.....	62	6,801	6,862	90	7,115	7,206	247	7,162	7,409
Mauritius and Dependencies.....	6,389	67	6,456	5,127	4	5,131	2,881	38	2,919
Nigeria.....	2,681	8,571	11,252	2,552	36,938	39,490	4,083	32,477	36,560
Republic of South Africa.....	10,915	16,198	27,113	9,987	17,654	27,641	19,010	18,050	37,060
Tanzania.....	86	6,820	6,907	51	7,014	7,065	78	6,392	6,469
Uganda.....	75	6,722	6,800	28	5,834	5,862	20	9,699	9,719
Other Asia	289,079	107,711	396,790	319,321	111,053	430,375	397,078	113,925	511,002
Ceylon.....	793	13,256	14,049	471	9,574	10,045	451	11,704	12,155
Hong Kong.....	29,940	1,102	31,043	37,817	1,094	38,911	50,026	1,014	51,040
India.....	15,120	28,305	43,424	12,678	27,415	40,093	14,323	28,450	42,774
Malaysia.....	2,617	37,656	40,272	3,028	38,425	41,453	842	21,456	22,298
China, Communist....	8,640	5,805	14,445	13,191	7,403	20,594	16,887	8,187	25,074
Japan.....	213,569	16,575	230,144	234,536	18,515	253,051	279,964	24,805	304,768
Taiwan (Republic of China).....	8,898	435	9,333	12,613	475	13,089	22,890	678	23,569
Oceania	30,627	41,646	72,273	38,470	45,499	83,968	45,556	44,186	89,742
Australia.....	21,143	26,230	47,372	30,723	28,851	59,573	35,094	29,377	64,471
Fiji.....	4,787	14	4,801	2,707	17	2,724	3,729	25	3,754
French Oceania.....	—	5,092	5,092	4	6,608	6,612	1	6,116	6,116
New Zealand.....	4,560	10,310	14,870	4,950	10,022	14,972	6,604	8,666	15,270
South America	103,114	261,718	364,832	100,606	218,436	319,041	97,112	280,374	377,487
Guyana.....	6,376	16,173	22,549	6,587	22,538	29,126	5,519	24,062	29,581
Brazil.....	22,250	13,323	35,573	22,831	12,946	35,777	22,160	9,276	31,436
Colombia.....	14,019	2,793	16,812	9,938	1,681	11,619	10,665	2,718	13,384
Ecuador.....	5,140	406	5,546	7,742	131	7,873	8,077	52	8,129
Surinam.....	191	8,511	8,702	—	8,150	8,150	13	8,143	8,156
Venezuela.....	40,215	208,425	254,670	48,496	166,563	215,059	43,569	232,758	276,327
Central America and Antilles	121,231	61,954	183,185	112,864	70,693	183,557	137,808	66,227	204,034
Jamaica.....	6,729	29,271	36,000	7,660	29,620	37,281	4,288	27,572	31,860
Trinidad and Tobago.....	6,436	10,234	16,670	5,225	10,825	16,050	6,616	12,134	18,750
Costa Rica.....	6,518	197	6,715	6,426	32	6,458	7,035	241	7,276
Honduras, Republic of.....	9,094	199	10,193	11,299	141	11,440	11,624	44	11,668
Mexico.....	11,694	15,553	27,247	12,131	21,408	33,539	12,638	16,897	29,535
Netherlands Antilles.....	43,072	268	43,341	38,073	437	38,511	59,074	319	60,293
Panama.....	19,378	36	19,414	16,048	17	16,066	14,784	13	14,798
North America	2,963,003	3,081,904	6,044,907	3,337,530	3,798,271	7,135,801	3,100,149	4,616,539	8,016,688
United States.....	2,962,983	3,081,848	6,044,831	3,337,436	3,798,174	7,135,611	3,400,081	4,616,260	8,016,341
Totals, Commonwealth and Preferential Countries	384,683	607,156	991,838	412,531	648,504	1,061,035	447,547	660,795	1,108,342
Totals, Other Countries	3,982,166	3,659,141	7,641,310	4,149,179	4,386,226	8,505,405	4,149,373	5,317,484	9,966,857
Grand Totals, Imports	4,366,849	4,296,300	8,633,148	4,831,709	5,034,730	9,866,439	5,096,920	5,978,279	11,075,199

¹ Less than \$500.

Section 4.—Trade by Commodity

This Section provides detailed information on the composition of Canada's exports and imports for 1966 and 1967. Table 8 shows exports and re-exports to and imports from all countries, the United Kingdom and the United States, classified by section; Table 9 gives detailed statistics of all commodities of any importance exported from Canada to all countries, to the United Kingdom and to the United States; and detailed statistics for imports into Canada by section and commodity appear in Table 10.

8.—Exports to and Imports from All Countries, the United Kingdom and the United States, by Section, 1966 and 1967

(Millions of dollars)

Section	Domestic Exports		Re-exports		Imports	
	1966	1967	1966	1967	1966	1967
All Countries.....	10,070.6	11,111.6	254.7	299.3	9,866.4	11,075.2
Live animals.....	78.0	42.3	0.1	0.9	12.9	21.9
Food, feed, beverages and tobacco.....	1,888.3	1,602.3	10.1	11.4	791.7	861.6
Crude materials, inedible.....	1,947.6	2,108.3	9.2	7.7	1,023.2	1,062.3
Fabricated materials, inedible.....	4,012.1	4,229.4	50.2	56.2	2,233.1	2,310.2
End products, inedible.....	2,119.3	3,106.8	181.5	216.8	5,483.4	6,550.0
Special transactions—trade.....	25.3	22.5	3.6	6.3	322.0	269.3
United Kingdom.....	1,122.6	1,169.1	9.3	9.0	644.7	673.1
Live animals.....	1	0.1	—	1	0.1	0.1
Food, feed, beverages and tobacco.....	286.7	293.3	0.8	0.4	44.2	42.9
Crude materials, inedible.....	231.6	246.4	0.5	0.4	31.6	30.0
Fabricated materials, inedible.....	547.7	570.6	1.2	1.4	175.2	176.5
End products, inedible.....	56.1	58.3	6.8	6.4	380.1	414.1
Special transactions—trade.....	0.6	0.3	1	0.3	13.5	9.4
United States.....	6,027.7	7,079.4	206.8	243.7	7,135.6	8,016.3
Live animals.....	69.0	34.5	0.1	0.8	12.2	20.8
Food, feed, beverages and tobacco.....	429.4	430.5	8.3	9.8	402.1	428.7
Crude materials, inedible.....	1,122.7	1,185.6	7.3	5.9	506.4	512.3
Fabricated materials, inedible.....	2,760.8	2,822.4	45.2	48.6	1,481.8	1,495.0
End products, inedible.....	1,626.0	2,588.9	142.8	173.0	4,451.6	5,323.6
Special transactions—trade.....	20.0	17.6	3.1	5.6	281.4	235.9

¹ Under \$50,000.

9.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1966 and 1967

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Live Animals.....	78,002	42,313	37	56	68,951	34,503
Food, Feed, Beverages and Tobacco.....	1,888,293	1,602,295	236,672	293,310	429,366	430,493
Meat, fresh, chilled or frozen.....	57,278	46,277	5,074	4,240	46,271	35,969
Other meat and meat preparations.....	14,604	12,037	321	285	8,239	7,004
Fish, whole or dressed, fresh or frozen.....	48,481	46,582	5,956	5,920	34,754	31,452
Fish, fillets and blocks, fresh or frozen.....	69,071	65,349	1,540	1,867	66,427	62,462
Fish, preserved, except canned.....	23,941	27,610	—	2	6,961	6,992
Fish, canned.....	25,854	40,870	10,021	20,718	815	1,383
Shellfish.....	34,472	35,830	775	685	31,577	33,095
Dairy produce, eggs and honey.....	34,667	33,527	15,315	10,467	2,428	2,684
Barley.....	44,957	72,609	5,741	12,308	8,112	8,651
Wheat.....	1,060,670	741,878	132,532	122,906	2,850	867
Other cereals, unmilled.....	27,862	21,032	1,047	788	6,725	6,979
Wheat flour.....	82,836	60,661	16,690	6,651	1,007	841
Other cereals, milled.....	9,222	11,033	947	1,093	1,772	2,135
Cereal preparations.....	10,644	12,420	331	315	9,017	10,718
Fruits and fruit preparations.....	23,038	29,297	6,594	8,353	12,250	16,366
Vegetables and vegetable preparations.....	39,718	48,168	15,932	22,254	8,744	11,595
Sugar and sugar preparations.....	13,777	15,942	213	326	10,681	12,885
Other foods and materials for foods.....	29,553	24,908	3,545	4,064	17,186	11,575
Oil seed cake and meal.....	21,751	17,497	21,074	17,305	57	12

9.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1966 and 1967—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Food, Feed, Beverages and Tobacco—						
concluded						
Other feeds of vegetable origin.....	18,327	17,004	1,328	1,014	13,167	12,106
Other fodder and feed.....	24,971	25,081	6,790	7,340	12,214	12,330
Whisky.....	127,508	141,514	388	318	122,736	136,487
Other beverages.....	5,085	5,296	12	22	4,822	5,022
Tobacco.....	40,003	49,875	34,504	44,067	554	886
Crude Materials, Inedible.....	1,947,625	2,108,298	231,552	246,431	1,122,691	1,185,628
Raw hides and skins.....	34,352	24,455	1,307	389	4,217	4,174
Fur skins, undressed.....	32,586	30,195	6,879	5,438	17,730	18,307
Other crude animal products.....	12,246	14,526	1,373	426	10,031	13,590
Seeds for sowing.....	12,819	9,601	2,272	1,497	7,018	5,606
Flaxseed.....	60,816	44,517	12,084	10,656	5	10
Rapeseed.....	38,480	40,868	436	138	23	36
Other oil seeds, oil nuts and oil kernels..	18,645	16,515	10,634	7,524	4,381	5,140
Other crude vegetable products.....	14,671	16,371	173	144	13,340	14,552
Pulpwood.....	40,974	38,319	3,008	2,186	20,467	29,737
Other crude wood materials.....	22,176	28,222	583	614	15,244	13,975
Textile and related fibres.....	10,534	7,323	1,198	135	4,442	3,648
Iron ores and concentrates.....	369,009	383,063	23,779	31,827	301,068	292,202
Scrap iron and steel.....	10,033	15,147	3	1	7,552	8,688
Aluminum ores, concentrates and scrap..	14,749	17,868	1	15	8,614	11,398
Copper in ores, concentrates and scrap..	130,808	157,464	2,554	1,598	41,203	16,488
Lead in ores, concentrates and scrap.....	20,342	20,440	787	470	10,714	6,374
Nickel in ores, concentrates and scrap..	186,725	203,981	81,301	92,679	28,653	37,171
Precious metals in ores, concentrates and scrap.....	45,010	47,823	26,668	29,600	12,513	9,596
Zinc in ores, concentrates and scrap.....	77,745	94,126	1,034	4,434	39,724	43,952
Radioactive ores and concentrates.....	36,366	23,874	22,605	22,772	13,761	1,047
Other metals in ores, concentrates and scrap.....	43,204	52,068	12,248	14,104	5,276	7,427
Crude petroleum.....	321,681	397,875	—	—	321,681	397,875
Natural gas.....	108,750	123,664	—	—	108,750	123,664
Coal and other crude bituminous substances.....	13,774	15,549	6	—	2,326	2,185
Asbestos unmanufactured.....	182,484	172,397	18,670	16,655	64,974	63,019
Sulphur.....	34,572	59,766	196	445	13,666	20,003
Other crude non-metallic minerals.....	42,307	42,552	1,682	2,307	30,948	28,910
Other waste and scrap materials.....	11,677	9,726	86	388	8,339	6,554
Fabricated Materials, Inedible.....	4,012,068	4,229,365	547,701	570,604	2,760,777	2,822,357
Leather and leather fabricated materials	9,897	9,267	1,371	1,772	6,145	4,999
Lumber, softwood.....	439,569	474,604	61,316	64,276	314,938	327,813
Lumber, hardwood.....	38,485	34,811	2,339	2,739	35,130	30,599
Shingles and shakes.....	27,381	27,409	168	121	26,866	26,932
Other sawmill products.....	6,257	6,192	376	489	5,757	5,631
Veneer.....	31,762	30,159	49	92	29,052	27,435
Plywood.....	41,518	47,519	25,565	31,814	7,476	5,657
Other wood fabricated materials.....	7,386	7,139	1,125	1,280	5,492	4,926
Wood pulp and similar pulp.....	520,068	543,433	35,588	32,317	390,760	382,445
Newsprint paper.....	968,224	955,261	48,883	43,642	823,664	815,780
Other paper for printing.....	24,251	27,569	3,499	2,191	18,822	21,955
Paperboard.....	29,732	28,207	21,003	21,291	878	845
Other paper.....	33,627	40,798	9,671	16,853	12,666	11,407
Yarn, thread, cordage, twine and rope.....	18,170	10,871	932	277	12,828	7,173
Cotton broad woven fabrics.....	11,138	10,291	5,167	7,596	4,231	817
Other broad woven fabrics.....	5,885	5,967	2,002	2,354	721	900
Other textile fabricated materials.....	12,272	12,572	1,289	1,666	2,455	4,411
Oils, fats, waxes, extracts and derivatives	21,030	21,470	8,846	9,254	2,445	2,584
Chemical elements.....	11,442	10,612	2,202	2,076	7,114	6,608
Other inorganic chemicals.....	41,248	43,766	10,029	9,357	21,555	24,958
Organic chemicals.....	57,151	66,033	15,162	17,754	29,737	32,657
Fertilizers and fertilizer materials.....	139,560	154,623	18	809	114,064	124,047
Synthetic rubber and plastics materials.....	76,378	67,304	12,562	13,545	22,653	17,972
Plastics, basic shapes and forms.....	13,362	12,809	1,007	1,056	2,063	3,566
Other chemical products.....	25,010	27,116	2,060	2,825	15,849	17,607
Petroleum and coal products.....	28,690	39,553	505	182	26,871	33,160
Ferroalloys.....	5,938	6,642	2,988	3,072	2,660	2,693
Primary iron and steel.....	61,271	56,075	1,803	671	55,540	50,489
Castings and forgings, steel.....	40,823	40,635	9	32	37,113	37,704
Bars and rods, steel.....	18,155	19,742	1,652	1,523	12,683	12,683
Plate, sheet and strip, steel.....	76,956	88,795	4,619	16,221	44,110	35,705

9.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1966 and 1967—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Fabricated Materials, Inedible—concl.						
Railway track material.....	11,547	11,103	—	—	1,554	1,597
Other iron and steel and alloys.....	29,379	28,559	445	262	19,530	22,345
Aluminum, including alloys.....	372,275	398,910	79,166	74,679	183,809	179,266
Copper and alloys.....	266,067	336,723	105,461	102,842	116,923	173,023
Lead, including alloys.....	27,834	29,921	9,985	9,799	11,087	13,003
Nickel and alloys.....	212,433	229,297	30,053	29,159	163,732	183,577
Precious metals, including alloys.....	17,773	25,411	534	1,725	17,048	22,913
Zinc, including alloys.....	67,834	72,938	27,215	30,808	32,547	20,966
Other non-ferrous metals and alloys.....	18,010	22,555	4,689	4,818	10,602	15,444
Metal fabricated basic products.....	52,595	57,404	3,427	3,792	33,898	35,473
Abrasive basic products.....	38,963	34,519	1,803	2,694	35,478	30,178
Other non-metallic mineral basic products.....	24,461	22,269	638	529	18,602	16,516
Electricity.....	16,188	16,287	—	—	16,188	16,287
Other fabricated materials, inedible.....	14,073	16,226	714	718	7,222	9,611
End Products, Inedible.....	2,119,324	3,106,839	56,058	58,309	1,625,975	2,588,856
Engines and turbines, general purpose.....	9,959	12,425	120	248	5,408	7,603
Electric generators and motors.....	8,783	12,092	423	1,033	3,993	7,404
Other general-purpose industrial machinery.....	37,769	48,096	2,250	1,862	21,379	28,392
Materials handling machinery and equipment.....	31,682	36,357	252	348	25,779	28,453
Drilling, excavating, mining machinery.....	24,633	23,039	651	850	14,126	12,675
Metalworking machinery.....	17,863	21,813	1,009	919	12,719	17,984
Woodworking machinery and equipment.....	13,827	16,774	1,105	1,132	5,410	7,859
Construction machinery and equipment.....	17,495	14,198	273	266	12,564	8,903
Plastics industry machinery and equipment.....	14,744	17,805	788	522	13,294	16,543
Pulp and paper industries machinery.....	9,293	14,784	817	424	6,172	11,138
Other special industry machinery.....	23,620	26,175	2,222	1,726	14,787	17,080
Soil preparation, seeding, fertilizing machinery.....	29,512	35,354	182	12	28,303	34,374
Combine reaper-threshers and parts.....	88,235	90,287	941	779	82,650	85,186
Other haying and harvesting machinery.....	33,222	35,444	45	10	31,117	33,716
Other agricultural machinery and equipment.....	14,669	16,930	235	416	13,877	15,627
Tractors.....	16,859	16,283	114	109	15,675	15,166
Railway and street railway rolling-stock.....	6,184	17,638	—	—	1,668	4,591
Passenger automobiles and chassis.....	429,624	879,395	877	236	346,378	816,002
Other motor vehicles.....	173,257	326,662	137	78	146,477	289,889
Motor vehicle engines and parts.....	137,857	158,907	381	901	134,387	151,739
Motor vehicle parts, except engines.....	252,858	365,104	1,411	1,572	213,683	319,365
Ships and boats.....	21,713	19,353	1,649	1,459	14,101	14,366
Aircraft, complete with engines.....	19,440	35,992	335	—	5,419	14,307
Aircraft engines and parts.....	72,658	94,307	1,140	1,352	57,514	77,283
Aircraft parts, except engines.....	118,090	183,312	594	549	104,080	167,048
Other vehicles.....	4,860	4,181	4	2	4,773	4,106
Rubber tires and tubes.....	9,682	16,223	68	144	4,687	11,233
Television and radio sets and phonographs.....	20,363	24,205	188	198	19,240	23,389
Other communication and related equipment.....	80,097	97,894	1,327	2,196	63,721	78,778
Heating and refrigeration equipment.....	16,823	13,475	4,100	3,734	8,250	6,031
Cooking equipment for food.....	3,498	3,695	1,781	2,196	672	711
Electric lighting and distribution equipment.....	32,066	42,468	2,001	1,771	15,287	25,380
Navigation equipment and parts.....	63,290	58,909	846	915	44,981	48,205
Other measuring, controlling, laboratory, medical and optical equipment.....	25,854	31,348	2,664	3,413	14,588	18,371
Hand tools and miscellaneous cutlery.....	7,037	7,211	1,329	1,082	1,164	1,045
Office machines and equipment.....	37,870	52,326	6,008	6,923	14,176	23,419
Other equipment and tools.....	24,332	25,885	4,264	3,961	12,040	13,301
Apparel and apparel accessories.....	28,902	30,163	3,764	3,835	13,709	14,466
Footwear.....	4,671	5,942	408	247	3,446	4,825
Toys, games, sporting, recreation equipment.....	10,008	11,123	1,169	1,049	6,325	7,516
Other personal and household goods.....	16,143	19,256	3,311	3,674	5,038	5,828
Medicinal and pharmaceutical products.....	16,347	17,579	643	507	1,925	2,757
Medical, ophthalmic, orthopaedic supplies.....	2,322	2,794	96	99	342	650
Printed matter.....	11,923	15,731	945	1,352	8,776	11,676

9.—Domestic Exports from Canada to All Countries, to the United Kingdom and to the United States, by Section and Commodity, 1966 and 1967—concluded

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
End Products, Inedible—concl.						
Photographic goods.....	9,517	7,731	573	503	5,109	3,185
Firearms, ammunition and ordnance.....	32,198	60,389	787	461	26,755	57,047
Containers and closures.....	8,387	9,241	335	412	5,006	6,252
Prefabricated buildings and structures..	16,137	13,745	184	320	7,284	7,129
Other end products.....	13,153	16,800	2,315	2,423	7,718	10,862
Special Transactions—Trade.....	25,316	22,470	554	342	19,962	17,559
Shipments valued at less than \$100 each.	16,239	12,287	453	328	12,849	9,848
Other special transactions—trade.....	9,078	10,183	101	15	7,112	7,712
Totals, Exports.....	10,070,627	11,111,580	1,122,574	1,169,053	6,027,722	7,079,396

10.—Imports into Canada for Consumption from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1966 and 1967

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Live Animals.....	12,910	21,895	126	133	12,241	20,765
Food, Feed, Beverages and Tobacco.....	791,741	861,596	44,187	42,872	402,097	428,735
Meat, fresh, chilled or frozen.....	39,609	40,257	3,994	315	16,090	17,635
Other meat and meat preparations.....	18,816	22,523	371	440	10,926	11,872
Fish and marine animals.....	29,966	35,516	557	564	16,783	17,536
Dairy produce, eggs and honey.....	28,936	28,364	1,352	1,312	10,745	10,802
Indian corn, shelled.....	31,554	42,149	—	—	31,548	42,147
Other cereals and cereal preparations.....	29,257	33,295	4,359	4,397	21,512	25,399
Bananas and plantains, fresh.....	31,763	33,499	—	—	21	18
Grapes, fresh.....	21,376	24,034	—	—	19,935	22,365
Oranges, mandarins and tangerines, fresh.....	28,703	30,553	4	2	22,553	24,449
Other fresh fruits and berries.....	39,715	41,146	13	—	37,078	38,050
Fruits, dried or dehydrated.....	15,214	15,617	8	6	6,809	7,165
Orange juice and concentrates.....	16,537	17,219	2	1	13,114	15,004
Other fruit juices and concentrates.....	7,119	7,644	383	285	5,798	6,352
Fruits and products, canned.....	28,818	29,880	852	889	15,322	14,451
Other fruits and fruit preparations.....	10,873	10,500	59	32	2,582	1,681
Nuts, except oil nuts.....	15,814	16,411	98	210	6,371	6,670
Tomatoes, fresh.....	18,864	18,910	—	—	12,431	11,916
Other fresh vegetables.....	56,037	57,753	—	1	54,437	55,641
Other vegetables and vegetable preparations.....	24,488	30,406	527	568	13,414	13,640
Raw sugar.....	44,873	47,575	—	—	—	—
Refined sugar, molasses and syrups.....	6,310	9,724	284	633	2,065	2,412
Sugar preparations and confectionery.....	14,023	15,979	6,892	7,805	3,686	3,434
Cocoa and chocolate.....	19,327	23,091	3,399	2,959	871	1,444
Coffee.....	72,389	78,027	213	750	15,728	14,652
Tea.....	23,130	23,808	3,621	3,353	714	713
Other foods and materials for foods.....	39,752	41,053	1,428	1,836	26,377	27,010
Oil seed cake and meal.....	20,675	19,904	1	1	20,675	19,904
Other fodder and feed.....	5,564	5,620	75	111	5,335	5,055
Distilled alcoholic beverages.....	25,588	27,541	13,905	14,463	2,207	2,266
Other beverages.....	17,919	21,759	1,306	1,394	1,365	1,497
Tobacco.....	8,733	11,841	484	567	5,607	7,554
Crude Materials, Inedible.....	1,023,212	1,062,268	31,622	29,979	506,439	512,292
Fur skins, undressed.....	20,368	17,625	3,836	1,788	7,927	6,555
Other crude animal products.....	20,753	16,484	923	761	17,779	13,351
Soybeans.....	52,438	48,063	—	—	52,436	48,058
Other oil seeds, oil nuts and oil kernels..	12,938	13,702	6	9	9,340	7,847
Rubber and allied gums, natural.....	24,848	19,461	5	35	2,134	1,950
Other crude vegetable products.....	21,353	22,349	151	273	15,850	16,502
Crude wood materials.....	24,067	27,375	—	—	23,869	27,090
Wool and fine animal hair.....	37,661	31,299	19,118	17,456	2,983	1,671
Cotton.....	49,982	64,508	14	81	31,958	41,182

¹ Less than \$500.

10.—Imports into Canada for Consumption from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1966 and 1967—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Crude Materials, Inedible—concl.						
Synthetic fibres.....	15,942	15,979	3,380	5,091	9,697	10,027
Other textile fibres.....	11,004	8,732	104	56	1,202	2,176
Iron ores and concentrates.....	56,024	32,869	—	—	52,442	31,484
Scrap iron and steel.....	20,951	15,145	1	50	20,831	15,094
Aluminum ores, concentrates and scrap.....	76,623	74,587	7	4	15,117	13,177
Other metals in ores, concentrates, scrap.....	46,328	57,278	1,518	2,143	22,810	39,782
Coal.....	141,038	145,544	—	—	141,038	145,544
Crude petroleum.....	299,001	355,416	—	—	—	7,708
Other crude bituminous substances.....	18,064	20,290	—	6	18,027	20,264
Abrasives, natural.....	9,629	9,719	470	469	7,031	7,898
Phosphate rock.....	19,601	20,563	—	—	17,853	18,435
Other crude non-metallic minerals.....	33,967	35,967	1,398	1,352	26,682	28,045
Other waste and scrap materials.....	10,583	9,314	693	405	9,431	8,450
Fabricated Materials, Inedible	2,233,137	2,310,208	175,186	176,538	1,481,763	1,494,988
Leather and leather fabricated materials.....	20,133	20,234	7,998	7,808	10,161	10,394
Rubber fabricated materials.....	34,113	38,276	2,609	1,799	28,312	32,806
Lumber.....	38,335	39,602	40	13	34,348	35,191
Veneer, plywood and wood building boards.....	23,172	29,601	126	124	7,874	8,894
Other wood fabricated materials.....	12,539	13,716	192	307	10,447	11,346
Wood pulp and similar pulp.....	8,904	5,972	30	1	7,369	4,700
Paper and paperboard.....	62,035	64,538	1,249	1,189	58,699	60,607
Cotton yarn and thread.....	16,058	15,583	3,384	3,600	5,606	4,760
Synthetic fibre yarn and thread.....	18,053	20,549	906	880	11,242	11,766
Other yarn and thread.....	15,208	16,606	7,553	6,295	3,075	5,866
Cordage, twine and rope.....	9,377	10,345	1,487	1,630	1,293	1,223
Broad woven fabrics, wool and hair.....	24,617	26,070	14,827	14,564	1,014	2,005
Broad woven fabrics, cotton.....	80,767	75,378	2,717	2,139	44,105	37,182
Broad woven fabrics, synthetic.....	24,309	29,099	1,345	1,325	12,793	14,127
Broad woven fabrics, mixed fibres.....	36,358	38,286	3,956	3,840	21,986	20,734
Other broad woven fabrics.....	28,992	28,038	1,205	926	2,927	2,399
Coated or impregnated fabrics.....	21,037	25,887	1,796	2,120	16,789	21,312
Other textile fabricated materials.....	45,585	43,742	3,312	2,863	34,492	29,997
Vegetable oils and fats, except essential oils.....	35,745	28,619	1,305	1,425	14,074	7,631
Other oils, fats, waxes, extracts, derivatives.....	24,547	24,567	663	568	20,846	21,600
Inorganic chemicals.....	64,900	64,825	6,818	5,797	50,373	50,587
Organic chemicals.....	106,571	116,003	9,383	10,764	79,699	81,799
Fertilizers and fertilizer materials.....	16,019	14,645	23	25	13,546	12,429
Synthetic and reclaimed rubber.....	28,679	30,019	158	245	26,778	28,153
Plastics materials, not shaped.....	74,140	80,868	2,180	2,505	66,321	71,129
Plastic film and sheet.....	36,083	39,115	2,378	2,084	30,115	31,019
Other plastics basic shapes and forms.....	23,983	27,830	667	796	22,238	25,349
Dyestuffs, except dyeing extracts.....	18,441	20,969	1,701	2,047	8,190	8,968
Pigments, lakes and toners.....	14,405	17,118	1,140	1,009	12,348	13,861
Paints and related products.....	11,072	12,429	524	495	10,465	11,804
Other chemical products.....	86,978	99,287	3,195	3,129	78,771	89,288
Fuel oil.....	102,775	119,824	1,628	3,725	11,260	16,602
Lubricating oils and greases.....	23,727	22,407	351	340	21,490	20,148
Coke of petroleum and coal.....	21,000	18,949	—	—	21,000	18,656
Other petroleum and coal products.....	29,224	37,135	2,308	2,650	16,282	16,164
Bars and rods, steel.....	44,904	42,761	3,664	3,270	10,705	11,170
Plate, sheet and strip, steel.....	117,008	117,230	5,599	10,763	78,003	73,477
Structural shapes and sheet piling, steel.....	43,919	41,464	4,863	5,307	17,617	13,201
Pipes and tubes, iron and steel.....	56,524	64,211	4,992	7,403	32,468	31,673
Wire and wire rope, steel.....	21,420	18,742	7,792	6,649	3,973	3,750
Other iron and steel and alloys.....	63,269	61,472	1,286	2,400	47,773	46,257
Aluminum, including alloys.....	72,140	85,492	3,893	4,439	62,485	75,636
Copper and alloys.....	25,645	19,705	3,661	3,907	20,793	13,863
Nickel and alloys.....	56,999	31,553	327	290	37,279	10,470
Precious metals, including alloys.....	39,515	24,882	16,042	13,727	23,450	11,098
Tin, including alloys.....	16,921	16,666	128	24	3,189	2,420
Other non-ferrous metals and alloys.....	23,151	25,640	604	600	17,474	21,706
Bolts, nuts and screws.....	32,117	40,774	729	768	27,497	35,808
Other basic hardware.....	45,569	57,381	2,818	3,053	37,574	47,606
Chain.....	13,466	13,409	1,935	2,029	7,603	7,513
Valves.....	34,434	35,947	2,856	2,360	29,393	30,033
Pipe fittings.....	26,016	29,971	2,203	1,972	19,063	22,065
Other metal fabricated basic products.....	53,519	56,522	5,016	4,682	44,375	46,699
Clay bricks, clay tiles and refractories.....	39,741	35,614	2,786	2,222	29,420	27,684

10.—Imports into Canada for Consumption from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1966 and 1967—continued

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Fabricated Materials, Inedible—concl.						
Sheet and plate glass.....	35,550	30,903	4,937	2,652	17,917	15,030
Other glass basic products.....	23,669	27,352	1,432	1,455	18,807	23,040
Abrasive basic products.....	15,706	15,582	412	443	13,247	12,968
Natural and synthetic gem stones.....	15,011	15,952	1,582	1,415	1,304	1,350
Other non-metallic mineral basic products.....	22,851	24,792	2,856	2,521	17,014	19,395
Electricity.....	10,198	10,038	—	—	10,198	10,038
Other fabricated materials, inedible.....	46,095	50,019	3,627	3,151	36,811	40,542
End Products, Inedible.....	5,483,408	6,549,967	380,135	414,149	4,451,648	5,323,634
A. MACHINERY.....	1,574,659	1,568,224	120,875	131,345	1,318,649	1,292,154
Engines and turbines, diesel, general purpose.....	24,554	25,253	6,055	7,358	17,947	17,026
Engines and turbines, general purpose, <i>n.e.s.</i>	37,718	40,501	4,396	5,145	31,909	32,389
Electric generators and motors.....	51,337	55,790	14,125	14,763	32,294	34,813
Bearings.....	54,768	59,166	4,308	5,360	39,883	44,046
Other mechanical power transmission equipment.....	44,706	49,261	4,299	4,895	38,949	43,105
Compressors, blowers and vacuum pumps.....	36,449	39,511	5,597	4,356	28,572	33,500
Pumps, except oil well pumps.....	21,298	23,062	1,469	2,446	18,253	19,004
Packaging machinery.....	25,231	24,021	1,147	1,527	23,265	20,866
Other general purpose industrial machinery.....	67,658	66,925	3,422	3,253	59,896	60,272
Cranes, derricks and hoists.....	41,870	38,724	1,518	1,253	36,965	32,734
Industrial lift trucks, powered.....	22,693	23,967	2,760	3,162	18,863	19,364
Other materials handling machinery, equipment.....	32,218	35,617	2,275	3,321	25,895	28,134
Drilling machinery and drill bits.....	42,947	39,874	781	928	39,708	36,860
Power shovels.....	25,765	25,225	153	283	24,572	24,366
Bulldozing and similar equipment.....	37,742	31,584	3,230	189	34,214	30,852
Front end loaders.....	45,596	42,669	907	342	44,333	41,646
Other excavating machinery.....	34,812	27,996	245	127	28,654	26,773
Mining, oil and gas machinery.....	47,029	45,228	4,478	4,801	36,638	37,276
Construction and maintenance machinery.....	40,066	37,692	1,013	941	36,880	34,752
Machine tools, metalworking.....	97,649	101,210	11,916	14,476	68,279	60,947
Welding apparatus and equipment.....	14,971	13,696	611	353	13,827	13,045
Rolling mill machinery.....	19,347	13,956	3,672	3,081	14,426	9,900
Other metalworking machinery.....	51,931	56,142	4,240	5,830	43,125	45,169
Pulp and paper industries machinery.....	36,606	39,379	3,751	6,942	23,969	23,574
Printing presses.....	16,104	20,136	1,080	1,791	12,115	13,824
Other printing machinery and equipment.....	17,477	20,832	755	883	15,804	18,470
Spinning, weaving and knitting machinery.....	31,579	20,340	2,430	2,062	22,606	12,287
Other textile industries machinery.....	27,965	22,684	2,883	2,355	20,336	16,468
Food, beverages and tobacco machinery.....	26,811	31,713	3,055	3,667	19,357	19,303
Plastics and chemical industry machinery.....	34,829	26,349	1,435	616	28,991	22,842
Other special industry machinery.....	51,349	51,274	4,395	3,225	39,317	40,873
Soil preparation, seeding, fertilizing machinery.....	34,109	42,070	811	689	32,814	40,265
Combine reaper-threshers.....	62,033	49,848	139	112	60,061	47,977
Other haying and harvesting machinery.....	42,507	45,954	218	374	41,461	44,003
Other agricultural machinery and equipment.....	43,965	47,068	527	558	41,946	44,732
Wheel tractors, new.....	154,217	133,845	12,661	16,573	112,798	107,812
Track-laying tractors and used tractors.....	19,872	18,913	715	56	19,147	18,856
Tractor engines and tractor parts.....	76,884	80,750	3,414	3,252	70,580	74,529
B. TRANSPORTATION AND COMMUNICATION EQUIPMENT.....	2,192,503	2,939,377	123,218	117,651	1,916,200	2,627,874
Railway and street railway rolling-stock.....	30,773	34,014	1,882	2,005	25,528	29,401
Convertible automobiles, soft top, new.....	33,526	47,775	7,336	4,669	24,955	41,535
Closed sedans, new.....	348,632	669,706	32,349	30,060	270,150	584,148
Other passenger automobiles and chassis.....	28,970	41,823	2,271	2,972	20,375	31,528
Trucks, truck tractors and chassis.....	99,954	120,731	449	155	68,534	118,986
Other motor vehicles.....	51,006	54,218	2,321	4,166	37,141	44,013
Motor vehicle engines.....	111,749	144,509	559	682	105,515	132,182
Motor vehicle engine parts.....	91,823	91,344	1,678	1,246	88,610	87,988
Motor vehicle parts, except engines.....	844,995	998,257	7,755	7,184	831,023	983,885
Marine engines and parts.....	32,702	37,516	3,080	5,599	24,640	25,285
Ships, boats and parts, except engines.....	39,659	23,974	14,709	4,761	13,112	11,162

10.—Imports into Canada for Consumption from All Countries, from the United Kingdom and from the United States, by Section and Commodity, 1966 and 1967—concluded

Section and Commodity	All Countries		United Kingdom		United States	
	1966	1967	1966	1967	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
End Products, Inedible—concl.						
B. TRANSPORTATION AND COMMUNICATION EQUIPMENT—concl.						
Aircraft, complete with engines.....	73,037	147,509	695	938	70,546	138,955
Aircraft engines and parts.....	70,842	103,590	19,665	23,002	51,136	80,505
Aircraft parts, except engines.....	83,350	109,965	7,347	5,873	75,301	103,179
Other transportation equipment.....	23,407	26,236	2,156	2,393	13,565	12,994
Telephone and telegraph equipment.....	29,220	35,412	5,770	5,735	20,583	24,949
Television and radio sets and phonographs.....	41,956	56,200	323	322	23,120	25,143
Electronic tubes and semi-conductors.....	47,492	42,628	2,335	2,290	41,239	35,487
Other communication and related equipment.....	139,410	153,972	10,538	13,599	111,127	116,549
C. OTHER EQUIPMENT AND TOOLS.....	861,161	1,001,909	41,854	57,176	724,440	826,311
Air conditioning and refrigeration equipment.....	59,904	73,542	3,138	3,056	54,223	65,675
Electric lighting fixtures and portable lamps.....	32,387	41,674	685	946	27,092	35,423
Switchgear and protective equipment.....	19,801	23,821	1,404	2,082	14,964	12,854
Industrial control equipment.....	22,341	26,770	1,174	1,398	20,379	24,028
Other electric lighting, distribution equipment.....	44,327	46,626	2,474	3,628	36,033	37,531
Auxiliary electric equipment for engines.....	34,444	46,411	489	545	33,338	45,126
Miscellaneous measuring, controlling instruments.....	43,371	49,693	1,645	1,805	40,093	45,768
Medical and related equipment.....	34,058	41,627	1,049	1,325	29,748	35,504
Navigation equipment.....	22,540	21,395	849	920	21,170	20,166
Other measuring, laboratory equipment, etc.....	117,493	137,992	5,846	8,242	97,152	111,494
Safety and sanitation equipment.....	25,363	29,089	1,369	1,541	22,391	26,687
Service industry equipment.....	26,823	30,846	521	812	25,573	28,897
Furniture and fixtures.....	28,569	33,050	934	1,147	22,176	24,335
Hand tools and cutlery.....	58,022	64,135	8,147	8,816	41,177	43,916
Electronic computers.....	93,495	115,902	2,187	4,043	83,126	101,223
Other office machines and equipment.....	78,671	88,971	5,294	10,530	48,140	52,470
Miscellaneous equipment and tools.....	119,551	130,366	4,598	6,339	107,665	115,214
D. PERSONAL AND HOUSEHOLD GOODS.....	341,401	417,784	56,378	61,449	104,377	122,000
Outerwear, except knitted.....	40,083	52,966	2,341	3,058	8,305	8,846
Outerwear, knitted.....	26,460	33,804	4,811	4,885	1,896	2,690
Other apparel and apparel accessories.....	33,085	36,613	4,455	4,414	8,790	9,706
Footwear.....	34,417	41,842	5,634	5,987	2,593	2,717
Watches, clocks, jewellery and silverware.....	28,277	35,942	4,582	5,181	8,043	10,060
Sporting and recreation equipment.....	19,305	23,751	2,022	2,735	9,452	11,351
Games, toys and children's vehicles.....	23,341	27,288	3,136	3,891	9,510	10,260
House furnishings.....	41,435	48,992	7,005	6,642	15,599	17,356
Kitchen utensils, cutlery and tableware.....	48,065	57,464	18,164	19,711	15,599	19,198
Other personal and household goods.....	46,934	59,122	4,228	4,945	24,590	29,816
E. MISCELLANEOUS END PRODUCTS.....	513,685	622,672	37,814	46,526	387,978	455,295
Medicinal and pharmaceutical products.....	44,387	51,837	6,887	8,600	24,900	27,531
Medical, ophthalmic, orthopaedic supplies.....	21,648	24,771	766	819	16,774	18,869
Newspapers, magazines and periodicals.....	50,939	57,208	913	972	47,487	51,567
Books and pamphlets.....	77,905	96,232	7,195	7,893	62,715	76,216
Other printed matter.....	32,214	36,043	1,324	1,752	29,117	31,018
Stationers' and office supplies.....	24,870	30,523	2,908	3,246	17,844	22,475
Unexposed photographic film and plates.....	33,364	38,434	4,906	6,578	23,317	26,115
Other photographic goods.....	68,732	94,730	994	2,869	56,052	74,233
Containers and closures.....	58,701	62,084	1,572	1,559	54,036	58,964
Other end products, inedible.....	100,925	130,808	10,349	12,238	55,736	70,307
Special Transactions—Trade.....	322,031	269,266	13,486	9,378	281,424	235,927
Shipments valued at less than \$200 each.....	257,301	193,802	10,139	6,433	227,234	173,398
Other special transactions—trade.....	64,729	75,464	3,347	2,946	54,190	62,529
Totals, Imports.....	9,866,439	11,075,199	644,741	673,056	7,135,611	8,016,341

Section 5.—Trade by Section and by Stage of Fabrication

This Section contains a series of statistics covering trade by stage of fabrication, based on the new commodity classification (see p. 987). The Section totals given in Tables 11 and 12 for the period from 1948 were compiled by converting statistics tabulated on the old classification to the new framework; old classes or fragments of classes were converted to appropriate new classes and changes in content, descriptions or codes of former classes were taken into account as much as possible, but the results for 1957 and previous years are subject to some limitations.

To classify exports and imports by stage of fabrication, that is, within the categories of Crude Materials, Fabricated Materials and End Products, requires a secondary classification of the commodities in certain Sections. Live Animals (Sect. I), being a natural product, is considered as crude materials; Food, Feed, Beverages and Tobacco (Sect. II) is allocated as follows: Crude Materials includes natural products not further processed than cleaned or prepared for shipment; Fabricated Materials includes commodities which are further processed and are used in processing industries rather than for direct human consumption, and also all commercial stock feeds; End Products includes commodities which are further processed and are mainly used directly for human consumption, and also prepared pet feeds. Sects. III, IV and V are clearly defined in the Standard Commodity Classification. Sect. VI contains relatively few classes; these have been pro-rated as necessary for both exports and imports according to studies undertaken over a number of years.

Exports.—An analysis of the figures for 1948-67 shows that export totals followed a generally upward trend. By 1967, their value had risen 264.7 p.c. over that in 1948, with a steady increase from 1954 onward. This growth was reflected in all sections except Live Animals where exports in 1967 declined to 48.2 p.c. of the value in 1948. Food, Feed, Beverages and Tobacco increased 90.8 p.c. over 1948; Crude Materials, Inedible were up 582.7 p.c.; Fabricated Materials, Inedible 204.0 p.c.; End Products, Inedible, where the growth rate was the most striking, increased 649.2 p.c.; and Special Transactions—Trade increased 477.9 p.c.

Exports during 1967 were 10.3 p.c. above those during 1966. Live Animals recorded a decline of 45.8 p.c.; Food, Feed, Beverages and Tobacco declined 15.1 p.c.; and Special Transactions—Trade declined 11.2 p.c. On the other hand, Crude Materials rose 8.2 p.c.; Fabricated Materials 5.4 p.c.; and End Products 46.6 p.c.

Analysis of exports by stage of fabrication indicates that exports of Crude Materials during 1967 increased 275.5 p.c. over 1948, Fabricated Materials were up 180.7 p.c. and End Products 465.2 p.c. Exports of Crude Materials during 1967 were 5.0 p.c. lower than in 1966 but those of Fabricated Materials were up 4.7 p.c. and those of End Products 41.2 p.c. The relative contribution of Crude Materials to total exports increased from 28.2 p.c. in 1948 to 29.0 p.c. in 1967 and that of End Products from 20.1 p.c. to 31.2 p.c. On the other hand, the contribution of Fabricated Materials declined from 51.7 p.c. to 39.8 p.c. of total exports.

Imports.—The total value of imports during 1967 advanced 323.0 p.c. over that in 1948. Between 1960 and 1967, imports increased by 102.0 p.c. against an increase of 111.4 p.c. in exports during the same period. Thus, while expanding imports have reflected the increasing prosperity of the Canadian people, exports have been more buoyant in recent years. Considering the period 1948-67, imports of Live Animals rose 544.2 p.c.; those of Food, Feed, Beverages and Tobacco, 209.2 p.c.; Crude Materials, Inedible, 55.0 p.c.; Fabricated Materials, Inedible, 211.7 p.c.; End Products, Inedible, 644.7 p.c.; and Special Transactions—Trade 784.7 p.c.

The relative importance of Food, Feed, Beverages and Tobacco dropped from 10.6 p.c. in 1948 to 7.8 p.c. in 1967; of Crude Materials, Inedible, from 26.2 p.c. to 9.6 p.c.; and

11.—Domestic Exports by Section and Stage of Fabrication, 1948-67

Year	Sect. I Live Animals	Sect. II Food, Feed, Beverages and Tobacco				Sect. III Crude Materials, Inedible	Sect. IV Fabricated Materials, Inedible	Sect. V End Products, Inedible
		Crude Materials	Fabricated Materials	End Products	Total			
ALL COUNTRIES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	87,877	462,291	179,126	198,483	839,901	308,821	1,391,274	414,708
1949.....	68,903	624,451	135,622	150,567	910,640	310,326	1,309,755	366,917
1950.....	84,592	510,900	134,700	169,703	815,302	332,917	1,594,641	264,926
1951.....	65,304	724,844	167,782	160,012	1,052,638	430,885	1,972,438	357,615
1952.....	5,974	989,900	181,091	147,820	1,318,812	467,143	2,033,701	439,048
1953.....	17,884	913,797	157,674	171,432	1,242,903	476,429	1,949,365	396,694
1954.....	19,407	630,031	149,058	183,582	962,672	502,040	2,030,945	331,972
1955.....	15,645	560,297	152,112	173,088	885,498	685,912	2,363,743	290,384
1956.....	13,401	750,432	152,507	180,528	1,083,467	872,967	2,441,879	325,609
1957.....	53,999	603,474	141,317	166,661	911,453	1,025,398	2,406,062	369,271
1958.....	101,534	699,896	140,904	191,450	1,032,250	963,137	2,246,818	434,500
1959.....	55,790	660,221	159,886	199,584	1,019,691	1,086,994	2,461,089	386,658
1960.....	41,038	614,277	141,402	191,283	946,962	1,114,543	2,729,389	409,683
1961.....	66,901	865,451	138,688	193,664	1,197,803	1,195,442	2,777,345	505,591
1962.....	68,054	808,022	151,225	212,888	1,172,135	1,361,595	2,907,126	654,763
1963.....	41,971	1,012,475	157,532	249,850	1,419,857	1,425,951	3,106,898	779,138
1964.....	34,514	1,298,519	210,942	296,426	1,805,886	1,616,145	3,502,496	1,109,006
1965.....	79,133	1,142,518	194,010	293,290	1,629,818	1,763,701	3,728,769	1,300,145
1966.....	78,002	1,362,808	204,236	321,247	1,888,293	1,947,625	4,012,068	2,119,324
1967.....	42,313	1,068,703	187,059	346,533	1,602,295	2,108,298	4,229,365	3,106,839
UNITED KINGDOM								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	226	234,056	76,524	83,279	393,859	46,178	228,256	14,670
1949.....	26	303,724	52,100	47,314	403,138	57,664	212,312	28,846
1950.....	7	185,672	43,858	45,189	274,719	47,211	140,023	5,850
1951.....	3	183,278	44,868	18,677	246,823	81,918	292,464	8,815
1952.....	12	241,238	39,428	2,327	282,993	95,694	356,227	9,424
1953.....	20	258,931	42,691	10,254	311,876	85,297	254,121	11,448
1954.....	18	184,747	36,323	14,045	235,115	86,914	324,446	4,476
1955.....	11	221,747	37,384	10,320	269,451	103,439	389,774	4,931
1956.....	22	232,322	46,878	13,734	292,934	130,636	380,952	6,558
1957.....	35	169,330	40,515	10,499	220,344	138,124	354,896	7,417
1958.....	275	218,328	33,790	29,672	281,790	139,653	330,172	19,611
1959.....	255	209,622	45,016	32,788	287,425	152,578	326,776	18,656
1960.....	210	195,553	42,975	19,718	258,246	178,936	460,357	17,338
1961.....	184	179,656	39,273	19,312	238,240	204,539	440,073	26,069
1962.....	105	191,434	51,235	27,612	270,282	172,050	435,774	30,624
1963.....	46	213,133	52,432	32,198	297,762	216,316	457,450	34,555
1964.....	42	207,202	54,186	50,334	311,721	236,357	602,570	48,586
1965.....	79	207,336	60,108	34,861	302,305	256,260	567,484	47,693
1966.....	37	195,683	53,446	37,543	286,672	231,552	547,701	56,058
1967.....	56	199,682	45,514	48,114	293,310	246,431	570,604	58,309
UNITED STATES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	85,156	137,550	15,876	47,995	201,420	208,311	901,061	96,541
1949.....	68,009	164,279	20,292	57,023	241,594	189,311	898,347	101,020
1950.....	83,888	185,424	26,034	75,437	286,896	222,462	1,311,668	105,726
1951.....	64,724	264,519	39,421	93,487	397,428	271,931	1,404,542	142,185
1952.....	5,554	246,428	46,125	99,481	392,034	277,607	1,426,767	187,297
1953.....	17,197	234,968	29,193	119,723	383,884	286,796	1,512,748	201,236
1954.....	18,510	176,121	29,482	120,485	326,087	296,559	1,471,992	184,101
1955.....	14,129	127,089	29,419	117,162	273,670	425,238	1,678,919	143,481
1956.....	11,020	154,550	31,843	125,437	311,829	556,047	1,755,733	151,984
1957.....	52,696	155,763	33,425	117,007	306,195	655,206	1,660,071	156,894
1958.....	99,919	161,603	31,935	124,204	317,832	652,435	1,554,720	178,454
1959.....	54,600	129,419	32,957	127,901	290,277	730,629	1,768,038	235,211
1960.....	39,121	125,188	32,560	129,923	287,971	676,879	1,698,231	220,700
1961.....	61,060	130,025	33,794	134,302	298,121	694,914	1,760,533	283,707
1962.....	64,422	121,930	42,366	141,485	305,780	884,041	1,968,046	375,905
1963.....	38,312	137,654	40,756	154,462	332,872	881,401	2,069,229	425,436
1964.....	30,115	144,645	49,163	168,161	361,069	978,637	2,237,248	632,975
1965.....	72,008	164,498	48,203	196,216	408,917	1,012,093	2,481,658	847,472
1966.....	68,951	154,520	51,680	223,166	429,366	1,122,691	2,760,777	1,625,975
1967.....	34,503	147,824	50,456	232,213	430,493	1,185,628	2,822,357	2,588,856

11.—Domestic Exports by Section and Stage of Fabrication, 1948-67

Sect. VI Special Transactions—Trade				Total Domestic Exports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
ALL COUNTRIES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
304	3,251	333	3,888	3,046,469	859,293	1,573,651	613,524	.....1948
141	2,120	148	2,409	2,968,948	1,003,821	1,447,497	517,632	.....1949
48	1,890	50	1,988	3,094,365	928,457	1,731,231	434,679	.....1950
36	3,200	37	3,273	3,882,153	1,221,069	2,143,420	517,664	.....1951
32	4,699	33	4,763	4,269,441	1,463,049	2,219,491	586,901	.....1952
25	2,863	26	2,914	4,086,190	1,408,135	2,109,902	568,152	.....1953
25	2,194	26	2,246	3,849,281	1,151,503	2,182,197	515,580	.....1954
27	3,621	1,799	5,447	4,246,630	1,261,881	2,519,476	465,271	.....1955
32	3,742	4,730	8,504	4,745,626	1,636,832	2,597,928	510,867	.....1956
1,850	3,225	7,540	12,616	4,778,799	1,684,721	2,550,604	543,472	.....1957
1,858	3,076	8,263	13,197	4,791,436	1,766,425	2,390,798	634,213	.....1958
1,981	2,832	6,638	11,450	5,021,672	1,804,986	2,623,807	592,880	.....1959
1,937	3,471	8,552	13,960	5,255,575	1,771,795	2,874,262	609,518	.....1960
4,337	403	7,164	11,903	5,754,986	2,132,131	2,916,436	706,419	.....1961
3,991	340	10,518	14,849	6,178,523	2,241,662	3,058,691	878,169	.....1962
9,771	748	14,196	24,714	6,798,529	2,490,168	3,265,178	1,043,184	.....1963
10,090	716	15,365	26,171	8,094,219	2,959,268	3,714,154	1,420,797	.....1964
9,935	720	12,857	23,512	8,525,078	2,995,287	3,923,499	1,606,292	.....1965
10,068	735	14,514	25,316	10,070,627	3,398,503	4,217,039	2,455,085	.....1966
7,618	843	14,009	22,470	11,111,580	3,226,932	4,417,267	3,467,381	.....1967
UNITED KINGDOM								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
—	61	—	61	683,249	280,460	304,841	97,949	.....1948
—	88	—	88	702,074	361,414	264,500	76,160	.....1949
—	85	—	85	467,896	232,890	183,966	51,039	.....1950
—	100	—	100	630,124	265,199	337,432	27,492	.....1951
—	110	—	110	744,461	336,944	395,765	11,751	.....1952
—	22	—	22	662,785	344,248	296,834	21,702	.....1953
—	63	—	63	651,033	271,679	360,832	18,521	.....1954
—	34	—	34	767,642	325,197	427,192	15,251	.....1955
—	11	—	11	811,113	362,980	427,841	20,292	.....1956
28	25	29	82	720,898	307,517	395,436	17,945	.....1957
25	22	27	75	771,576	358,282	363,984	49,310	.....1958
33	44	34	111	785,802	362,488	371,836	51,478	.....1959
42	80	81	203	915,290	374,741	503,412	37,137	.....1960
97	7	135	240	909,344	384,476	479,353	45,516	.....1961
101	7	97	205	909,041	363,690	487,016	58,333	.....1962
256	17	426	699	1,006,838	429,751	509,908	67,179	.....1963
287	28	188	503	1,199,779	443,888	656,784	99,108	.....1964
284	20	183	487	1,174,309	463,959	627,612	82,737	.....1965
281	18	255	554	1,122,574	427,553	601,165	93,856	.....1966
203	13	126	342	1,169,053	446,372	616,131	106,549	.....1967
UNITED STATES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
15	401	23	439	1,492,929	431,032	917,338	144,559	.....1948
36	390	38	464	1,498,745	421,635	919,029	158,081	.....1949
21	471	22	514	2,011,052	491,795	1,338,073	181,185	.....1950
11	473	12	496	2,281,306	601,185	1,444,436	235,684	.....1951
11	472	12	495	2,289,753	529,600	1,473,364	286,790	.....1952
10	514	11	535	2,402,397	538,971	1,542,455	320,970	.....1953
8	469	8	486	2,297,734	491,198	1,501,943	304,594	.....1954
10	441	10	500	2,535,938	566,466	1,708,819	260,653	.....1955
10	689	999	1,657	2,788,270	721,627	1,788,225	278,420	.....1956
1,482	906	3,115	5,503	2,836,565	865,147	1,694,402	277,016	.....1957
1,508	922	2,278	4,708	2,808,067	915,555	1,587,577	304,936	.....1958
1,617	1,094	1,784	4,495	3,083,151	916,165	1,802,089	364,966	.....1959
1,530	1,097	6,643	9,270	2,932,171	842,718	1,732,188	357,266	.....1960
3,519	97	5,225	8,841	3,107,176	889,518	1,794,424	423,234	.....1961
3,155	277	6,812	10,243	3,608,439	1,073,548	2,010,689	524,202	.....1962
7,801	571	10,758	19,130	3,766,380	1,065,168	2,110,556	590,656	.....1963
7,935	550	11,631	20,116	4,271,059	1,161,332	2,286,961	822,767	.....1964
7,802	574	9,931	18,307	4,840,456	1,256,401	2,530,435	1,053,619	.....1965
7,966	594	11,402	19,962	6,027,722	1,354,128	2,813,051	1,860,543	.....1966
6,106	428	11,025	17,559	7,079,396	1,374,061	2,873,241	2,832,094	.....1967

12.—Imports by Section and Stage of Fabrication, 1948-67

Year	Sect. I	Sect. II				Sect. III	Sect. IV	Sect. V
	Live Animals	Food, Feed, Beverages and Tobacco				Crude Materials, Inedible	Fabricated Materials, Inedible	End Products, Inedible
		Crude Materials	Fabricated Materials	End Products	Total			
ALL COUNTRIES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	3,399	136,009	91,012	51,660	278,681	685,117	741,106	879,520
1949.....	2,997	153,949	97,236	61,289	312,474	613,114	750,186	1,008,899
1950.....	2,307	200,920	114,570	66,513	382,003	744,771	825,408	1,146,341
1951.....	3,222	217,119	115,900	90,005	423,025	904,510	1,108,837	1,515,096
1952.....	3,593	215,351	98,051	90,071	403,474	711,674	1,036,545	1,690,063
1953.....	3,664	220,239	89,980	94,641	404,860	665,652	1,110,339	2,005,835
1954.....	3,800	253,481	99,736	100,289	453,507	600,823	1,012,813	1,818,972
1955.....	4,689	249,956	104,932	108,567	463,454	699,291	1,187,775	2,150,115
1956.....	5,375	279,318	114,798	129,540	523,656	825,787	1,528,130	2,590,053
1957.....	5,341	271,622	136,983	147,975	556,579	830,162	1,505,796	2,501,191
1958.....	5,955	280,722	123,986	156,004	560,712	690,140	1,313,053	2,402,125
1959.....	13,175	279,835	129,516	154,512	563,863	728,238	1,392,791	2,731,352
1960.....	7,426	298,651	120,476	155,519	574,647	744,993	1,343,775	2,718,262
1961.....	7,025	327,268	129,473	164,785	621,526	763,536	1,395,779	2,879,561
1962.....	7,561	355,310	143,314	158,139	656,763	826,523	1,487,419	3,152,226
1963.....	9,673	377,592	218,595	174,291	770,477	897,296	1,570,293	3,173,449
1964.....	17,124	395,475	187,316	194,806	777,596	960,662	1,812,988	3,701,202
1965.....	10,801	404,681	148,532	205,677	758,890	1,006,274	2,114,423	4,476,279
1966.....	12,910	422,087	144,959	224,695	791,741	1,023,212	2,233,137	5,483,408
1967.....	21,895	456,910	156,373	248,313	861,596	1,062,268	2,310,208	6,549,967
UNITED KINGDOM								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	265	357	1,768	10,756	12,881	30,351	134,579	106,160
1949.....	222	394	2,687	15,566	18,647	27,081	122,165	131,474
1950.....	260	1,901	4,834	15,400	22,135	40,607	143,958	191,162
1951.....	327	808	2,370	16,215	19,393	53,681	165,956	172,332
1952.....	248	1,116	4,014	16,511	21,641	24,006	131,690	168,694
1953.....	479	3,290	3,511	17,512	24,313	31,001	161,286	223,956
1954.....	286	4,780	3,632	17,081	25,493	23,518	141,962	185,898
1955.....	260	2,736	4,860	17,760	25,356	29,351	146,740	187,327
1956.....	360	2,548	5,260	17,871	25,679	28,750	196,514	219,421
1957.....	584	3,037	5,988	19,775	28,800	28,078	197,403	246,574
1958.....	470	3,897	6,765	20,074	30,736	24,040	169,043	288,543
1959.....	455	5,630	7,590	20,259	33,479	25,640	177,662	345,261
1960.....	198	4,283	8,338	20,226	32,848	25,236	167,531	357,012
1961.....	142	4,648	8,117	20,975	33,740	28,139	160,503	388,233
1962.....	516	4,138	7,441	20,316	31,894	31,428	176,785	316,929
1963.....	474	5,327	6,667	19,600	31,595	36,401	168,881	284,857
1964.....	432	4,425	3,161	27,230	34,817	37,304	180,331	313,349
1965.....	125	8,189	3,220	28,911	40,320	36,995	189,933	342,638
1966.....	126	8,215	5,493	30,479	44,187	31,622	175,186	380,135
1967.....	133	3,910	5,358	33,604	42,872	29,979	176,538	414,149
UNITED STATES								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	3,092	51,289	12,931	10,565	74,784	425,719	526,855	749,065
1949.....	2,757	63,425	17,895	21,096	102,416	383,150	560,106	845,094
1950.....	2,020	83,983	18,224	21,895	124,102	457,172	574,219	912,237
1951.....	2,859	100,452	23,113	33,113	156,677	487,395	773,655	1,287,352
1952.....	3,320	103,320	20,873	40,408	164,601	406,743	787,222	1,462,473
1953.....	3,124	99,745	23,322	47,026	170,093	358,721	829,921	1,703,389
1954.....	3,485	118,551	23,343	50,393	197,317	309,877	747,534	1,544,438
1955.....	4,325	122,434	29,572	55,031	207,038	339,248	874,934	1,851,874
1956.....	4,772	144,140	37,136	70,234	251,510	401,715	1,096,282	2,214,930
1957.....	4,422	139,380	36,087	81,133	256,600	397,193	1,095,931	2,071,619
1958.....	5,190	142,044	34,458	86,233	262,735	291,503	942,761	1,893,424
1959.....	12,300	147,892	41,304	83,876	273,072	300,646	955,179	2,103,953
1960.....	6,838	163,038	41,111	85,307	289,456	325,818	922,257	2,066,485
1961.....	6,493	187,333	45,536	87,214	320,133	335,902	943,086	2,178,165
1962.....	6,689	208,465	52,730	79,858	341,053	360,125	980,713	2,499,281
1963.....	8,888	218,332	53,972	85,653	357,958	383,907	1,036,299	2,534,050
1964.....	16,365	217,033	53,976	85,062	356,071	443,025	1,197,118	2,954,801
1965.....	10,246	223,372	60,732	90,423	374,527	490,848	1,350,165	3,578,300
1966.....	12,241	242,739	64,059	95,301	402,097	506,439	1,481,763	4,451,648
1967.....	20,765	264,843	64,498	99,394	428,735	512,292	1,494,988	5,323,634

12.—Imports by Section and Stage of Fabrication, 1948-67

Sect. VI Special Transactions—Trade				Total Imports	Recapitulation Stage of Fabrication			Year
Crude Materials	Fabricated Materials	End Products	Total		Crude Materials	Fabricated Materials	End Products	
ALL COUNTRIES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
2,429	6,561	21,445	30,436	2,618,258	826,954	838,679	952,625	.....1948
2,449	8,329	15,577	26,354	2,714,025	772,509	855,751	1,085,765	.....1949
2,198	8,617	13,528	24,343	3,125,172	950,196	948,595	1,226,382	.....1950
3,826	13,661	32,763	50,249	4,004,939	1,128,677	1,238,398	1,637,864	.....1951
4,988	16,505	49,576	71,069	3,916,418	935,606	1,151,101	1,829,710	.....1952
5,039	17,457	34,962	57,458	4,247,808	894,594	1,217,776	2,135,438	.....1953
6,397	19,776	51,313	77,486	3,967,401	864,501	1,132,325	1,970,574	.....1954
6,670	19,231	36,529	62,431	4,567,754	960,606	1,311,938	2,295,211	.....1955
7,533	26,668	39,750	73,951	5,546,952	1,118,013	1,669,596	2,759,343	.....1956
7,704	26,467	40,106	74,277	5,473,346	1,114,829	1,669,246	2,689,272	.....1957
8,348	26,864	43,297	78,508	5,050,492	985,165	1,463,903	2,601,426	.....1958
8,196	28,862	42,444	79,501	5,508,921	1,029,444	1,551,169	2,928,308	.....1959
10,322	30,326	62,945	93,593	5,482,695	1,061,392	1,494,577	2,926,726	.....1960
11,430	31,490	58,231	101,152	5,768,578	1,109,259	1,556,742	3,102,577	.....1961
15,727	31,025	80,531	127,284	6,257,776	1,205,121	1,661,758	3,350,896	.....1962
17,301	31,195	88,525	137,021	6,558,209	1,301,862	1,820,083	3,436,265	.....1963
27,222	50,816	140,097	218,135	7,487,707	1,400,483	2,051,120	4,036,105	.....1964
33,118	62,293	171,068	266,479	8,633,148	1,454,874	2,325,248	4,853,025	.....1965
40,836	70,543	210,652	322,031	9,866,439	1,499,045	2,448,639	5,918,755	.....1966
34,909	55,457	178,900	269,266	11,075,199	1,575,982	2,522,038	6,977,180	.....1967
UNITED KINGDOM								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
141	1,498	7,659	9,298	293,533	31,114	137,845	124,575	.....1948
90	1,658	1,083	2,831	302,420	27,787	126,510	148,123	.....1949
72	2,055	544	2,671	400,793	42,840	150,847	207,106	.....1950
87	2,704	715	3,506	415,194	54,903	171,030	189,262	.....1951
106	2,723	2,467	5,296	351,576	25,476	138,427	187,672	.....1952
162	3,129	1,115	4,406	445,441	34,932	167,926	242,583	.....1953
254	2,845	1,973	5,073	382,229	28,838	148,439	204,952	.....1954
173	2,881	1,031	4,084	393,117	32,520	154,481	206,118	.....1955
203	4,359	1,085	5,647	476,371	31,861	206,133	238,377	.....1956
219	4,519	1,142	5,879	507,319	31,918	207,910	267,491	.....1957
247	4,146	1,279	5,673	518,505	28,654	179,954	309,896	.....1958
267	4,448	1,362	6,077	588,573	31,992	189,700	366,882	.....1959
295	4,316	1,497	6,107	588,932	30,012	180,185	378,735	.....1960
489	4,506	2,470	7,464	618,221	33,418	173,126	411,678	.....1961
603	1,834	3,073	5,510	563,062	36,685	186,060	340,318	.....1962
582	1,054	2,955	4,591	526,800	42,784	176,602	307,412	.....1963
978	1,772	5,013	7,762	573,995	43,139	185,264	345,592	.....1964
1,137	2,064	5,846	9,047	619,058	46,446	195,217	377,395	.....1965
1,714	2,964	8,809	13,486	644,741	41,677	183,643	419,423	.....1966
1,210	1,980	6,188	9,378	673,050	35,232	183,876	453,941	.....1967
UNITED STATES								
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	
2,063	4,277	12,636	18,975	1,798,490	482,163	544,063	772,266	.....1948
2,236	5,582	13,885	21,704	1,915,227	451,568	583,583	880,075	.....1949
2,030	5,270	12,482	19,782	2,089,531	545,205	597,713	946,614	.....1950
3,650	8,904	31,594	44,149	2,752,087	594,356	805,672	1,352,059	.....1951
4,780	11,858	46,595	63,233	2,887,593	518,163	819,953	1,549,476	.....1952
4,780	11,904	33,272	49,956	3,115,205	406,370	865,147	1,783,687	.....1953
5,938	14,406	48,283	68,628	2,871,279	437,881	790,283	1,643,114	.....1954
6,276	13,081	34,367	53,725	3,331,143	472,283	917,587	1,941,272	.....1955
7,133	17,444	37,608	62,185	4,031,395	557,760	1,150,862	2,322,772	.....1956
7,256	16,579	37,791	61,628	3,887,391	548,251	1,148,597	2,190,543	.....1957
7,790	16,313	40,433	64,535	3,460,147	446,527	993,532	2,020,090	.....1958
9,410	17,043	39,236	63,915	3,709,065	468,414	1,013,526	2,227,125	.....1959
10,178	18,000	48,361	75,771	3,686,625	505,104	981,368	2,200,153	.....1960
14,217	24,540	72,922	111,678	3,863,968	539,956	1,006,670	2,317,342	.....1961
15,813	26,606	81,035	123,454	4,444,556	626,940	1,057,983	2,652,061	.....1962
24,764	44,549	127,593	196,905	5,164,285	701,187	1,295,643	3,167,456	.....1964
29,920	56,097	154,728	240,744	6,044,831	754,386	1,466,994	3,823,451	.....1965
35,784	60,966	184,674	281,424	7,135,611	797,203	1,606,788	4,731,623	.....1966
30,688	47,832	157,407	235,927	8,016,341	828,588	1,607,318	5,560,435	.....1967

Fabricated Materials, Inedible, from 28.3 p.c. to 20.9 p.c. On the other hand, the relative importance of End Products, Inedible, rose from 33.6 p.c. to 59.1 p.c. Live Animals and Special Transactions—Trade form a comparatively small proportion of total imports.

Analysis of imports by stage of fabrication shows that the proportion of Crude Materials went down from 31.6 p.c. in 1948 to 14.2 p.c. in 1967, and of Fabricated Materials from 32.0 p.c. to 22.8 p.c. The relative importance of End Products, on the other hand, increased from 36.4 p.c. to 63.0 p.c. during the same period.

PART III.—THE GOVERNMENT AND FOREIGN TRADE

Section 1.—Federal Foreign Trade Services*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy. It is appreciated, however, that two-way trade should be encouraged so that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although numerous private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives. The federal Department of Industry, Trade and Commerce, a primary function of which is the promotion of external trade, makes available to businessmen a wide variety of services to assist them in selling their products abroad. These services are provided by the Department's head office in Ottawa, seven regional offices in Canada, and a corps of Trade Commissioners stationed around the world.

Trade services available from the various branches, divisions and agencies of the Department of Industry, Trade and Commerce are described below. The work of these entities is interrelated, each operating in its own field but working closely with the others to effect the over-all objective of trade promotion.

Trade Commissioner Service.—The Trade Commissioner Service, as the overseas arm of the Department, is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 73 offices are maintained in 50 countries.

Every effort is made by Trade Commissioners to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian businessmen, they study potential markets for specific Canadian commodities and services. Economic reports provide background information necessary to the formulation of Departmental trade policy. Reports are provided on the demand in the country concerned, prices, competition, trade and exchange regulations, tariffs, shipping and packaging requirements, credit terms, channels of distribution, labelling regulations,

*This Section was prepared in the several Branches of the Department of Trade and Commerce as it was organized before the legislation integrating that Department and the Department of Industry was passed in March 1969. Departmental services in the area of foreign trade, as described here, have not been greatly changed although they are, in some instances, under different Branch or Division designations. For the functions of the re-organized Department as a whole, see the Appendix to this volume.

etc. Inquiries from local businessmen for goods obtainable from Canada are forwarded to the Department in Ottawa, or directly to Canadian firms in a position to supply the products required.

The supervision of Canadian exhibits at overseas trade fairs and the provision of assistance to participating Canadian firms is an important function of many offices. Trade Commissioners make local arrangements for and travel with Canadian trade missions visiting overseas markets. They also seek sources of supply for a wide variety of goods on behalf of Canadian importers.

In developing trade opportunities, Canada's Trade Commissioners travel extensively in their territories, visit leading industrial and commercial centres and call on government officials, businessmen, trade associations and municipal authorities. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian products, while creating connections for Canadian exporters and facilitating the collection of trade information. They return to Canada at periodic intervals and make tours of Canadian industrial and commercial centres. Such direct contacts enable them to discuss specific problems with businessmen and bring into focus the Canadian commercial scene.

In countries where Canada has a diplomatic mission, the Canadian trade office is the commercial division and the Trade Commissioner has the rank of Minister (Commercial), Minister-Counsellor (Economic), Commercial Counsellor, Commercial Secretary or Assistant Commercial Secretary. When attached to a consulate, he carries the title of Deputy Consul General (Commercial), Consul (Commercial), or Vice-Consul (Commercial), according to his rank, in addition to that of Trade Commissioner or Assistant Trade Commissioner. He may also be the Consul General, in charge of the office. Where trade offices are detached and do not form part of a diplomatic mission, the Trade Commissioner may also be required to undertake consular, immigration and other duties as the sole representative of Canada.

CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT JANUARY 1969

ARGENTINA.—Commercial Counsellor, Canadian Embassy, Casilla de Correo 3898, Suipacha 1111, Buenos Aires. Territory includes Paraguay.

AUSTRALIA.—

Sydney: Commercial Counsellor for Canada, P.O. Box 3952 GPO, A.M.P. Building, Circular Quay, Sydney. Territory includes States of New South Wales and Queensland, Capital Territory, Northern Territory, and Dependencies.

Victoria: Commercial Counsellor for Canada, Mobil Centre, 2 City Rd., South Melbourne, 3205, Victoria. Territory includes States of Victoria, South Australia, Western Australia and Tasmania.

Canberra: Commercial Counsellor, Office of the High Commissioner for Canada, Commonwealth Ave., Yarralumla 2600, Canberra ACT.

AUSTRIA.—Commercial Counsellor, Canadian Embassy, P.O. Box 190, Obere Donaustrasse 49/51, 1020, Vienna 2. Territory includes Albania, Bulgaria, Hungary and Romania.

BELGIUM.—Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels 4. Territory includes Luxembourg.

BRAZIL.—

Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Caixa Postal 2164-ZC-00, Edifício Metrópol, Av. Presidente Wilson 165, Rio de Janeiro.

São Paulo: Consul and Trade Commissioner, Canadian Consulate, Caixa Postal 6034, Edifício Scarpa, Av. Paulista, 1765, 9 andar, São Paulo.

BRITAIN.—

London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London, W1X 0AB. Territory includes Gibraltar.

Liverpool: Canadian Government Trade Commissioner, Martins Bank Bldg., Water Street Liverpool L2 3SY. Territory includes Midlands and North England.

BRITAIN.—concluded

Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George St., Glasgow C.2, Scotland. Territory includes Scotland.

Belfast: Canadian Government Trade Commissioner, 15-17 Chichester St., Belfast BT1 4JB, Northern Ireland. Territory includes Northern Ireland.

CEYLON.—Commercial Division, Office of the High Commissioner for Canada, P.O. Box 1006, 6 Gregory's Road, Cinnamon Gardens, Colombo.

CHILE.—Commercial Counsellor, Canadian Embassy, Casilla 771, Agustinas 1225, Santiago.

COLOMBIA.—Commercial Secretary, Canadian Embassy, Apartado Aereo 8582, Edificio Banco de Los Andes, Carrera 10, No. 16-92, Bogota. Territory includes Ecuador.

CUBA.—Commercial Division, Canadian Embassy, Gaveta 6125, Calle 30 No. 518 esquina 7ª Avenida, Miramar, Havana.

CZECHOSLOVAKIA.—Commercial Secretary, Canadian Embassy, Chancery, Mickiewiczova 6, Prague 6.

DENMARK.—Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen V. Territory includes Greenland and Poland.

DOMINICAN REPUBLIC.—Commercial Division, Canadian Embassy, Apartado 1393, Edificio Copello 408, Calle El Conde, Santo Domingo.

EUROPEAN COMMUNITIES.—Mission of Canada to the European Communities, Canadian Embassy, 35 rue de la Science, Brussels 4, Belgium. Territory includes European Economic Community, European Atomic Energy Community, European Coal and Steel Community.

FRANCE.—Minister-Counsellor (Commercial), Canadian Embassy, 35 Ave. Montaigne, Paris 8°. Territory includes Algeria, Andorra, Monaco and Morocco.

GERMANY.—

Bad Godesberg: Commercial Counsellor, Canadian Embassy, Kennedy-Allee 35, Bad Godesberg, West Germany. Territory includes States of Baden-Wuerttemberg, Bavaria, Hesse, Rhineland-Palatinate, Saar, West Berlin.

Duesseldorf: Consul General, Canadian Consulate General, Koenigsallee 82, 4 Duesseldorf 1, West Germany. Territory includes State of North Rhine-Westphalia.

Hamburg: Consul General, Canadian Consulate General, Esplanade 41-47, 2000 Hamburg 36, West Germany. Territory includes City States of Bremen and Hamburg; States of Lower Saxony and Schleswig-Holstein.

GHANA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 1639, E 115/3 Independence Ave., Accra. Territory includes Guinea, Ivory Coast, Liberia, Mali, Mauritania, Togo and Upper Volta.

GREECE.—Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens 138. Territory includes Turkey.

GUATEMALA.—Commercial Counsellor, Canadian Embassy, P.O. Box 400, 5a Avenida 11-70, Zone 1, Guatemala City, C.A. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.

HONG KONG.—Senior Canadian Government Trade Commissioner, P.O. Box 126, P & O Building, 21-23, Des Voeux Rd., Central, Hong Kong. Territory includes Cambodia, People's Republic of China, Laos, Macao and Viet-Nam.

INDIA.—Commercial Counsellor for Canada, P.O. Box 11, 13 Golf Links Rd., New Delhi 1. Territory includes Bhutan, Nepal and Sikkim.

IRAN.—Commercial Division, Canadian Embassy, P.O. Box 1610, Bezrouke Bldg., Corner of Takht Jamshid Ave. and Forsat St., Tehran.

IRELAND.—Commercial Counsellor for Canada, 66 Upper O'Connell St., Dublin.

ISRAEL.—Commercial Secretary, Canadian Embassy, P.O. Box 20140, 84 Hahashmonaim St., Tel Aviv. Territory includes Cyprus.

ITALY.—

Rome: Minister-Counsellor (Commercial), Canadian Embassy, Via G.B. De Rossi 27, 00161 Rome. Territory includes Provinces of Toscana, Marche, Umbria, Lazio, Abruzzi-Molise, Puglia, Campania, Basilicata, Calabria, Sicilia and Sardegna. Other countries: Libya and Malta.

Milan: Consul General and Trade Commissioner, Canadian Consulate General, C.P. 3977, Via Vittor Pisani 19, 20124 Milan. Territory includes Provinces of Emilia-Romagna, Lombardia, Piedimonte, Trentino-Alto Adige, Veneto, Liguria, Trieste, Valle D'Aosta and Friuli-Venezia.

JAMAICA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 1500, Tobago Rd., (corner Trafalgar Rd. and Knutsford Blvd.) Kingston 10. Territory includes Bahamas, British Honduras, Cayman Islands, Turks and Caicos Islands.

JAPAN.—Minister (Commercial), Embassy of Canada, Akasaka Post Office, Tokyo 107. Territory includes Korea and Okinawa.

KENYA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 3778, Industrial Promotion Services Bldg., Kimathi St., Nairobi. Territory includes Malawi, Tanzania, Uganda and Zambia.

LEBANON.—Commercial Counsellor, Canadian Embassy, Boîte Postale 2300, Alpha Bldg., Rue Clemenceau, Beirut. Territory includes Iraq, Jordan, Kuwait, People's Republic of Southern Yemen (Aden), Persian Gulf area, Saudi Arabia, Syria, Trucial States and Yemen.

MALAYSIA.—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 990, A.I.A. Bldg., Ampang Road, Kuala Lumpur. Territory includes Brunei and Burma.

MEXICO.—Commercial Counsellor, Canadian Embassy, Apartado Postal 5-364, Melchor Ocampo 463, Mexico 5, D.F.

NETHERLANDS.—Commercial Counsellor, Canadian Embassy, Sophialaan 7, The Hague.

NEW ZEALAND.—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 12-049, Wellington North ICI Building, Molesworth St., Wellington. Territory includes Cook Islands, Fiji, French Oceania, Gilbert and Ellice Islands, Tahiti, Tonga and Western Samoa.

NIGERIA.—Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 851, Niger House, Odunlami St., Lagos. Territory includes Dahomey, Gambia, Niger, Senegal and Sierra Leone.

NORWAY.—Commercial Counsellor, Canadian Embassy, Fridtjof Nansens plass 5, Oslo 1. Territory includes Iceland.

PAKISTAN.—Commercial Secretary, Office of the High Commissioner for Canada, Hotel Shahrazed, Islamabad. Territory includes Afghanistan.

PERU.—Commercial Secretary, Canadian Embassy, Casilla 1212, Edificio El Pacifico, Corner Avenida Arequipa and Plaza Washington, Lima. Territory includes Bolivia.

PHILIPPINES.—Consul General and Trade Commissioner, Canadian Consulate General, P.O. Box 1825, 1414 Roxas Blvd., Manila. Territory includes Republic of China (Taiwan).

PORTUGAL.—Commercial Counsellor, Canadian Embassy, Rua Rosa Araujo, 2-7º, Lisbon 2. Territory includes Azores, Cape Verde Islands, Madeira and Portuguese Guinea.

PUERTO RICO.—Consul and Trade Commissioner, El Convento Hotel, San Juan. Territory includes Dominican Republic, Haiti and U.S. Virgin Islands.

SINGAPORE.—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 845, International Building, 360 Orchard Rd., Singapore 1. Territory includes Indonesia and Thailand.

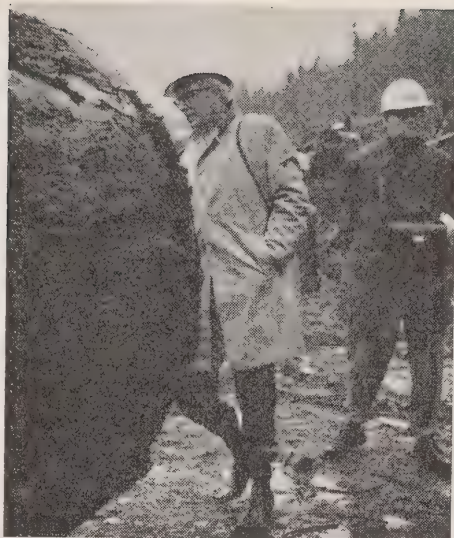
SOUTH AFRICA.—

Johannesburg: Canadian Government Trade Commissioner, P.O. Box 715, Mobil House, Corner Rissik and De Villiers Sts., Johannesburg. Territory includes Provinces of Natal, Orange Free State and Transvaal. Other countries: Angola, Botswana, Lesotho, Malagasy, Mauritius, Mozambique, Reunion and Swaziland.

Cape Town: Canadian Government Trade Commissioner, P.O. Box 683, African Life Centre, St. George's St., Cape Town. Territory includes Cape Province. Other countries: St. Helena and South West Africa.

- SPAIN.**—Commercial Counsellor, Canadian Embassy, Apartado 117, Edificio España, Avenida de Jose Antonio 88, Madrid. Territory includes Balearic Islands, Canary Islands, Spanish Sahara and Equatorial Guinea.
- SWEDEN.**—Commercial Counsellor, Canadian Embassy, P.O. Box 14042, Kungsgatan 24, S-104 40 Stockholm. Territory includes Finland.
- SWITZERLAND.**—Commercial Secretary, Canadian Embassy, Kirchenfeldstrasse 88, 3000 Berne. Territory includes Liechtenstein and Tunisia.
- TRINIDAD AND TOBAGO.**—Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 1246, Colonial Bldg., 72 South Quay, Port-of-Spain, Trinidad. Territory includes Barbados, Leeward and Windward Islands, French Guinea, Guadeloupe, Guyana, Martinique and Surinam.
- UNION OF SOVIET SOCIALIST REPUBLICS.**—Commercial Counsellor, Canadian Embassy, 23 Starokon-yushenny Pereulok, Moscow.
- UNITED ARAB REPUBLIC.**—Commercial Division, Canadian Embassy, Kasr el Doubara Post Office, 6 Sharia Rouston Pasha, Garden City, Cairo, Egypt. Territory includes Ethiopia, Somali Republic and Sudan.
- UNITED NATIONS.**—Permanent Mission of Canada to the United Nations, 866 United Nations Plaza, Suite 250, New York, N.Y. 10017.
- UNITED STATES.**—
- Washington: Commercial Counsellor, Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington, D.C. 20036. Territory includes District of Columbia.
 - New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York, N.Y. 10019. Territory includes States of Connecticut, New Jersey (twelve northern counties) and New York. Other countries: Bermuda.
 - Boston: Consul and Trade Commissioner, Canadian Consulate General, 500 Boylston St., Boston, Mass. 02116. Territory includes States of Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. Other countries: St. Pierre and Miquelon.
 - Chicago: Consul and Senior Trade Commissioner, Canadian Consulate General, 310 South Michigan Ave., Suite 2000, Chicago, Ill. 60604. Territory includes States of Illinois, Indiana, Iowa, Kentucky, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Wisconsin.
 - Cleveland: Consul and Trade Commissioner, Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113. Territory includes State of Ohio.
 - Dallas: Consul and Trade Commissioner, Canadian Consulate, 2100 Adolphus Tower, 1412 Main St., Dallas, Texas 75202. Territory includes States of Texas, Arkansas, Kansas, New Mexico and Oklahoma.
 - Detroit: Consul and Trade Commissioner, Canadian Consulate, 1920 First Federal Bldg., 1001 Woodward Ave., Detroit, Mich. 48226. Territory includes States of Michigan and Indiana.
 - Los Angeles: Consul and Trade Commissioner, Canadian Consulate General, 510 West Sixth St., Los Angeles, Cal. 90014. Territory includes States of Arizona, California (ten southern counties), and Clark County in Nevada.
 - New Orleans: Consul and Trade Commissioner, Commercial Division, Canadian Consulate General, 2110 International Trade Mart, 2 Canal St., New Orleans, La. 70130. Territory includes States of Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Tennessee.
 - Philadelphia: Consul and Trade Commissioner, Canadian Consulate, 3 Penn Center Plaza, Philadelphia, Pa. 19102. Territory includes States of Delaware, Maryland, New Jersey (nine southern counties), Pennsylvania, Virginia and West Virginia.
 - San Francisco: Consul and Trade Commissioner, Commercial Division, Canadian Consulate General, One Maritime Plaza, Golden Gate Center, San Francisco, Cal. 94111. Territory includes States of California (except the ten southern counties), Colorado, Hawaii, Nevada, (except Clark County), Utah and Wyoming.
 - Seattle: Consul and Trade Commissioner, Canadian Consulate General, 1305 Tower Bldg., Seventh Avenue and Olive Way, Seattle, Wash. 98101. Territory includes States of Alaska, Idaho, Montana, Oregon and Washington.
- URUGUAY.**—Commercial Division, Canadian Embassy, Casilla Postal 852, 1005 Calle Prudencia Vasquez y Vega, Montevideo. Territory includes Falkland Islands.
- VENEZUELA.**—Commercial Counsellor, Canadian Embassy, Apartado del Este 62320, Avenida La Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Territory includes Netherlands Antilles.
- YUGOSLAVIA.**—Commercial Secretary, Canadian Embassy, Proleterskih Brigada 69, Belgrade.

Dutch housing experts observe logging operations on Vancouver Island. As part of a continuing campaign to introduce timber frame housing in the Netherlands, the Department of Industry, Trade and Commerce in 1968 brought a Housing Mission to Canada to study logging techniques, lumber and plywood manufacture and large-scale home-building methods.



Recent Canadian Trade Missions abroad included a group of fourteen silverware and jewellery manufacturers who visited Australia to examine the market and display some of their products.



Trade Fairs and Missions Branch.—It is the function of this Branch to manage the Department's annual program of participation in trade fairs abroad and of outgoing and incoming trade missions. The Trade Fairs Abroad Division and the Trade Missions Division co-ordinate departmental activity in implementing these promotion programs and in organizing the trade fair exhibits and trade missions scheduled during the year. The Branch Director acts as chairman of the departmental committees that select the program and the Division Chiefs preside over working committees appointed to handle detailed planning. The Branch also provides liaison with Trade Commissioner Service posts abroad, trade associations in Canada, provincial governments and other federal departments or agencies in the development of trade promotion programs. In 1968 the Department sponsored exhibits at 47 trade fairs in ten countries, including Britain, France, Germany, Japan and the United States. Some 400 Canadian companies participated in this program and their products were seen by over 16,000,000 visitors to the fairs.

The trade missions program for 1968 produced 22 trade missions. Divided into incoming and outgoing formal missions, the Department sponsored 13 trade missions rep-

representing over 100 foreign businessmen from Yugoslavia, Romania, Poland, France, the Netherlands, Spain, Kuwait, Iran, Portugal, India, Mexico, Guatemala, Honduras, Colombia, Chile, Peru and Argentina, while Canadian businessmen visited Britain, France, Italy, Germany, the U.S.S.R., Mexico, Jamaica, Venezuela, Peru, Chile, Australia, New Zealand and South Africa in nine organized missions. The Department's formal trade missions program was further supplemented by a program for incoming trade visitors under which over 50 foreign businessmen and government officials from 15 different countries received assistance to visit industries in Canada.

Trade Policy Service.—The Office of Trade Relations, together with the Office of Commodity Trade Policy, which was established in September 1966, forms the Trade Policy Service of the Department of Industry, Trade and Commerce.

The main function of the Office of Trade Relations is to safeguard and improve terms of access for Canadian exporters in foreign markets. The Office is concerned with the conduct of Canadian trade relations with other countries, including the negotiation and administration of trade agreements and Canadian participation in international conferences and meetings dealing with trade and economic matters. It endeavours to find practical solutions for tariff problems and other difficulties encountered in foreign markets by Canadian exporters and, as a service to exporters, provides expert information, advice and assistance on foreign tariffs, import and exchange controls, documentation requirements and other foreign governmental regulations affecting Canada's trade. The Office also has responsibilities in relation to the export financing facilities available for the development of exports of Canadian capital equipment. The Area Divisions of the Office—Commonwealth, United States, Europe, Latin American and Asia and Middle East—are the central points of contact between Canada's Trade Commissioners abroad and the Department in Ottawa.

The Office of Commodity Trade Policy has two main areas of interest: it makes detailed commodity studies to ensure that the development of Canadian trade and related policies reflects the key role of export in the economy, and it has the responsibility for international commodity policy work, including the negotiation of international commodity arrangements and related activities.

Transportation and Trade Services Branch.—The functions of this Branch relate to freight transportation matters, export and import controls, trade directories, the administration of the seven Regional Offices and the provision of general guidance to firms seeking entry into the export field. These activities are conducted by three Divisions: the Transportation Division is concerned primarily with industrial transportation from the export shipper's point of view, with policies and practices affecting the movement of international trade, and with developments and trends in shipping services and freight rates; the Export and Import Permits Division administers the controls established under the Export and Import Permits Act; and the Regional Offices and Trade Services Division administers the Department's Regional Offices and compiles the Exporters' Directory, a confidential directory of firms engaged in or seriously interested in exporting commodities or services.

Commodity Branches.—The Commodities and Industries Services include three commodity Branches—the Agriculture and Fisheries Branch, the Industrial Materials Branch and the Manufacturing Industries and Engineering Branch. These Branches provide the main link between industry and the Department; they maintain close contact with the business community so as to be familiar with production and supply conditions throughout the country. Emphasis is placed on the search for products and services, the sale of which can be promoted abroad.

The Agriculture and Fisheries Branch is organized into five Divisions to cover fisheries, grain, livestock and animal products, plant products, and commodity arrangements and markets development. The Industrial Materials Branch is composed of three Divisions to

handle chemicals, forest products and metals and minerals. The Manufacturing Industries and Engineering Branch is organized into five Divisions responsible for appliances and commercial machinery, electrical and electronic equipment, mechanical equipment and engineering, textiles and consumer goods, and transportation equipment; a project division is responsible for specialized studies. These Divisions are staffed by commodity officers who are specialists in their fields and are available to assist Canadian businessmen.

Commodity officers visit manufacturing plants and production facilities, attend and address meetings of business associations and study groups and prepare product reports and market surveys. They constitute the principal channel through which information on Canadian products and services reaches Canadian Trade Commissioners abroad and a channel through which information on sales opportunities in countries abroad is disseminated to industry in Canada. They continually analyse reports from Trade Commissioners abroad to determine potential markets for commodities and services of interest to Canadian industry. In co-operation with the Canadian Government Exhibition Commission, they assist in making arrangements for the display of commodities in trade fairs throughout the world to introduce Canadian products into new markets. They organize and accompany departmental trade missions and serve as delegates to international commodity conferences to study world market conditions and to consider corrective adjustments.

Publicity Branch.—The function of the Publicity Branch is to stimulate interest in Canadian products in foreign markets and to encourage Canadian manufacturers to look beyond domestic horizons. Advertising, public relations and publicity techniques are used in varying combinations to accomplish these objectives. Advertising, periodicals, booklets, brochures and other printed matter are used in direct support of trade fairs and missions; news releases, radio tape recordings and television film clips are employed to inform Canadians of foreign trade opportunities and successes.

The Branch is composed of six Divisions. The Foreign Operations Division plans and executes the major activities concerning trade fairs and in-store promotions. Working closely with them is the Editorial Division which employs writers and editors to prepare promotional material, and the Art Division which is responsible for design, production and technical work. The Media Relations Division prepares and distributes press releases, articles, photographs, speeches and background material to newspapers, radio and television stations, magazines and the Canadian trade press. It provides publicity material for distribution abroad and produces and distributes films and television film clips to promote interest in Canada as a supplier of many commodities. The Canada Courier Division produces *Canada Courier*, an illustrated, eight-page international trade promotion newspaper, published on behalf of Canadian exporters to promote products and services abroad. It has a circulation of 97,000 and is distributed in more than 100 countries. The English edition is published six times a year and the French, Spanish and German editions twice annually. The Foreign Trade Division publishes the magazine *Foreign Trade*, fortnightly, and *Commerce extérieur*, monthly. These journals, designed to help Canadian exporters, contain information on overseas markets, tariffs and exchange rates as well as other pertinent trade data.

Office of Tourism.—The Office of Tourism comprises the Canadian Government Travel Bureau and the Travel Industry Branch. The Bureau is charged with promoting travel to Canada from other countries; the Branch is concerned with the study and analysis of the Canadian travel industry, including Federal Government activities in support of tourism.

Canadian Government Travel Bureau.—The Canadian Government Travel Bureau is in operation to encourage tourist travel to Canada and to co-ordinate the tourist promotion conducted by the provinces, transportation companies and national, regional and local tourist associations. The Bureau undertakes extensive tourist advertising campaigns abroad, provides tourist publicity material for foreign newspapers, magazines, radio and television outlets, and handles about 2,000,000 inquiries a year from potential visitors to

Canada. Offices are operated in New York, Chicago, San Francisco, Minneapolis, Los Angeles, Boston, Philadelphia, Cincinnati, Rochester, Indianapolis, Cleveland, Detroit, Washington, Hartford, Pittsburgh and Seattle in the United States; the Bureau also has representation in London, Paris, Frankfurt, Amsterdam, Copenhagen, Mexico City, Tokyo, and Sydney, Australia.

Travel Industry Branch.—The Branch is concerned primarily with the domestic travel industry. Its duties entail close examination of the nature and extent of tourist facilities and services in Canada and appraisal of their adequacy to meet visitor expectations; the study of federal, provincial and private programs and policies related to the growth and development of the travel industry; assessment of industry strengths, weaknesses and problems; and the preparation of advice to the Minister on ways and means to aid the industry. Close liaison is maintained with federal and provincial departments and agencies having activities related to travel and tourism and with major elements of the private sector of the Canadian travel industry.

The Branch also keeps under review the tourism and travel policies and practices of other countries, studies trends and developments in international tourism, and concerns itself with the activities of international organizations and agencies involved with tourism so far as Canada's interests may be related.

Export Credits Insurance Corporation.—This Corporation was established under the provisions of the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It operates in two fields—export credits insurance and long-term export financing.

Insurance is available to all persons or corporations carrying on business in Canada to cover export sales made on customary credit terms. It provides protection against risks involved in the export, manufacture, treatment or distribution of goods, or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or an export licence or the imposition of restrictions on the import or export of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country. The insurance is available under three main classifications—general commodities, capital goods and services. General commodities policies cover a policyholder's export sales to all countries for a period of one year, and are renewable. Two types are available: the contracts policy, which insures an exporter against loss from the time he books an order until payment is received; or the shipments policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received. Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit up to a maximum of five years may be necessary. Specific policies are issued for transactions involving capital goods but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services. The Corporation may also extend unconditional guarantees to Canadian chartered banks which will agree to provide non-recourse financing to insured exporters who have sold capital equipment abroad on medium-term credit.

The Corporation insures exporters on a co-insurance basis, the exporter retaining a small percentage of the risk involved, and the same principle operates in the distribution of recoveries obtained after the payment of a claim. When, in the opinion of the Minister of Industry, Trade and Commerce, a proposed transaction is in the national interest but

CF-5s for the Royal Netherlands Air Force coming off the production line at Canadair, Montreal. These twin-jet tactical aircraft, also produced for the Canadian Armed Forces as CF-5s, are capable of level flight supersonic speed and are ideally suited for close support, all-altitudes photo-reconnaissance and interceptor roles.



Heavy tracked vehicles built in a Calgary plant being inspected before shipment to the Soviet Union—they are part of a million-dollar order for vehicles ranging in size from two to 30 tons.

would impose upon the Corporation a liability for a term or in an amount in excess of that normally undertaken, the Corporation may be authorized by the Governor in Council to enter into a contract of insurance at the Government's risk.

The Corporation also administers direct financing facilities available under the Act in cases where export sales involving capital goods are of such a nature as to warrant credit terms in excess of five years. The Corporation, when authorized by the Governor in Council, buys the promissory notes or other negotiable instruments of the foreign purchaser.

Section 2.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs.

Subsection 1.—The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferential, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada that provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

Most-Favoured-Nation rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariffs, or under all Tariffs.

Valuation.—In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold "(a) to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions". In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty ordinarily may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal

* Information relating to rate of duty, value for duty and anti-dumping duty is available from the Department of National Revenue, Customs and Excise, which administers the Customs Act, the Customs Tariff and the Anti-dumping Act.

taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Anti-dumping Act.—Canada's Anti-dumping Act (SC 1968-69, c. 10) provides, in brief, that where goods are dumped, i.e., the export price is less than the normal value, and such dumping has caused, is causing, or is likely to cause material injury to the production of like goods in Canada, or has materially retarded or is materially retarding the establishment of the production in Canada of like goods as determined by the Anti-dumping Tribunal, there shall be levied, collected and paid an anti-dumping duty. This anti-dumping duty is in an amount equal to the margin of dumping of the entered goods.

Drawback.—There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as "home consumption" drawbacks, is provided for under the Customs Act and the Customs Tariff and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

The Tariff Board.—The organization and functions of the Tariff Board are described in the Appendix to this volume, under the heading of Departments, Boards, Commissions etc.

Subsection 2.—Tariff and Trade Arrangements with Other Countries as at Dec. 1, 1968

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.

The Commonwealth countries with which Canada has trade agreements providing for exchange of preferential rates are: Australia, the Bahamas, Barbados, Bermuda, Guyana, British Honduras, Jamaica, the Leeward and the Windward Islands, Trinidad and Tobago, New Zealand, Britain and its dependent territories, and Malawi. Canada also exchanges preferences with Ceylon, Cyprus, Malaysia and Malta and accords preferences to India, Pakistan, Ghana, Nigeria, Kenya, Tanzania, Uganda, Zambia and Sierra Leone. Many of these countries are also members of the GATT. In addition, Canada has trade agreements with Ireland and South Africa under which preferences are exchanged.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on Oct. 30, 1947, and brought the General Agreement into force on Jan. 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade.

At the beginning of April 1968, there were 76 full members in the GATT. These countries and the effective dates of their accession are indicated in the following list. In addition, Tunisia and the United Arab Republic were provisional members. The GATT is applied on a *de facto* basis to a number of newly independent states—Algeria, Botswana, Democratic Republic of the Congo, Lesotho, Maldives Islands, Cambodia, Mauritius, Mali, Singapore and Zambia—pending decisions as to their future commercial policies.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the countries previously responsible for their commercial relations, and by even less formal arrangements.

**Tariff and Trade Arrangements with Commonwealth Countries
as at Dec. 1, 1968**

Country	Agreement	Tariff Treatment
AUSTRALIA.....	Trade Agreement signed Feb. 12, 1960; in force June 30, 1960. GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and margins and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BARBADOS.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Nov. 30, 1966.	The parties exchange specified tariff preferences.
BOTSWANA.....	GATT: <i>de facto</i> application pending Botswana's decision on commercial policy.	Canada and Botswana exchange preferential tariff treatment.
BRITAIN.....	Trade Agreement signed Feb. 23, 1937, effective Sept. 1, 1937; modified by exchanges of letters Nov. 16, 1938 and Oct. 20, 1947. GATT effective Jan. 1, 1948.	Various concessions are granted by each country including exchange of preferential tariff rates. The Agreement (as modified) includes provisions relating to the Colonies, Dependencies and Trustships.
CEYLON.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
COMMONWEALTH CARIBBEAN (BAHAMAS, BERMUDA, BRITISH HONDURAS, THE LEEWARD ISLANDS, AND THE WINDWARD ISLANDS).	Canada-British West Indies Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. Protocol signed July 8, 1966 continues <i>ad interim</i> and amends Part I of the Canada-British West Indies Trade Agreement; terminates Part II of that Agreement and incorporates a number of additional provisions. Bermuda, British Honduras and the Leeward and the Windward Islands participate in GATT.	The parties exchange specified tariff preferences.
CYPRUS.....	GATT effective Aug. 16, 1960.	Canada exchanges preferential tariff treatment with Cyprus.
GAMBIA.....	GATT effective Feb. 18, 1965.	Canada and Gambia exchange preferential tariff treatment.
GHANA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 18, 1957.	Canada accords British preferential treatment to Ghana (except on cocoa beans). Ghana extends most-favoured-nation treatment to Canada.
GUYANA.....	Relations are based on the Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective July 5, 1966.	The parties exchange specified tariff preferences.
INDIA.....	Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948.	Canada accords British preferential treatment to India. India extends most-favoured-nation treatment to Canada.
JAMAICA.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 6, 1962.	The parties exchange specified tariff preferences.
KENYA.....	GATT effective Dec. 12, 1963.	Canada accords British preferential tariff treatment to Kenya. Kenya extends most-favoured-nation treatment to Canada.

**Tariff and Trade Arrangements with Commonwealth Countries
as at Dec. 1, 1968—concluded**

Country	Agreement	Tariff Treatment
LESOTHO.....	GATT: <i>de facto</i> application pending Lesotho's decision on commercial policy.	Canada and Lesotho exchange preferential tariff treatment.
MALAWI.....	Malawi and Canada observe the terms of the 1958 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland. GATT effective July 6, 1964.	Canada exchanges preferential tariff treatment with Malawi.
MALAYSIA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1963.	Canada and Malaysia exchange preferential tariff treatment.
MALTA.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1964.	Canada exchanges British preferential treatment with Malta.
NEW ZEALAND.....	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July 26, 1948.	The parties exchange specific preferences on scheduled goods and reciprocally grant British preferential rates on items not scheduled. May be terminated on six months notice.
NIGERIA, FEDERATION OF.....	Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 1, 1960.	Canada accords British preferential treatment to Nigeria. Nigeria extends most-favoured-nation treatment to Canada.
PAKISTAN.....	Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948.	Canada accords British preferential treatment to Pakistan. Exchange of most-favoured-nation treatment.
RHODESIA.....	Canada does not recognize the present Government of Rhodesia.	Effective Nov. 11, 1965, Canada withdrew preferential treatment from Rhodesian goods, making them liable to the general tariff rate. Effective Dec. 31, 1965, Rhodesia withdrew preferential treatment from Canadian goods and required that they pay the most-favoured-nation rate.
SIERRA LEONE.....	Relations continue to be governed by Trade Agreement with Britain of 1937. GATT effective Apr. 27, 1961.	Exchange of most-favoured-nation treatment. Canada accords British preferential treatment to Sierra Leone. Sierra Leone extends most-favoured-nation treatment to Canada.
SINGAPORE.....	GATT: <i>de facto</i> application pending Singapore's decision on commercial policy.	Canada and Singapore exchange preferential treatment.
TRINIDAD AND TOBAGO.....	Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective Aug. 31, 1962.	The parties exchange specified tariff preferences.
UGANDA.....	GATT effective Oct. 9, 1962.	Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada.
UNITED REPUBLIC OF TANZANIA.....	GATT effective for Tanganyika Dec. 9, 1961 and extended to Zanzibar upon formation of United Republic Apr. 23, 1964.	Canada accords British preferential tariff treatment to the United Republic of Tanzania. Tanzania extends most-favoured-nation tariff treatment to Canada.
ZAMBIA.....	GATT: <i>de facto</i> application pending Zambian decision on commercial policy.	Canada accords British preferential treatment to Zambia. Zambia extends most-favoured-nation tariff treatment to Canada.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968**

Country	Agreement	Tariff Treatment
ALGERIA.....	Franco-Canadian Trade Agreement of 1933 applied to Algeria. Algeria maintains a <i>de facto</i> application of the GATT.	Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation treatment.
ARGENTINA.....	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941. GATT effective Oct. 11, 1967.	Exchange of most-favoured-nation treatment.
AUSTRIA.....	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
BELGIUM-LUXEMBOURG.....	Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BENELUX (BELGIUM-NETHERLANDS-LUXEMBOURG CUSTOMS UNION).	(See Belgium-Luxembourg and Netherlands.)	
BOLIVIA.....	Order in Council of July 20, 1935, accepted Article 15 of U.K.-Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BRAZIL.....	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation treatment.
BULGARIA.....	Trade Agreement signed Oct. 8, 1963 and renewed to Oct. 8, 1969.	Exchange of most-favoured-nation treatment and undertaking by Bulgaria to purchase a minimum of 200,000 metric tons of wheat or equivalent in flour during the three years validity of the Agreement.
BURMA.....	GATT effective July 29, 1948.	Exchange of most-favoured-nation treatment.
BURUNDI.....	GATT effective July 1, 1962.	Canada grants most-favoured-nation treatment.
CAMBODIA.....	Franco-Canadian Trade Agreement of 1933 applied to Cambodia. Although not a full member, Cambodia takes part in the work of GATT under a special arrangement.	Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.
CAMEROON.....	Franco-Canadian Trade Agreement of 1933 applied to Cameroon. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation treatment.
CENTRAL AFRICAN REPUBLIC...	Franco-Canadian Trade Agreement of 1933 applied to Central African Republic. GATT effective Aug. 14, 1960.	Exchange of most-favoured-nation treatment.
CHAD.....	Franco-Canadian Trade Agreement of 1933 applied to Chad. GATT effective Aug. 11, 1960.	Exchange of most-favoured-nation treatment.
CHILE.....	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation treatment.
CHINA.....	<i>Modus vivendi</i> signed Sept. 26, 1946. Covers the territory of China and Taiwan.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968—continued**

Country	Agreement	Tariff Treatment
COLOMBIA.....	Treaty of Commerce with Britain of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CONGO (BRAZZAVILLE).....	Franco-Canadian Trade Agreement of 1933 applies to Congo (Brazzaville). GATT effective Aug. 15, 1960.	Exchange of most-favoured-nation treatment.
CONGO (LEOPOLDVILLE).....	Belgo-Canadian Convention of Commerce of 1924 applied to Congo (Leopoldville). Maintains a <i>de facto</i> application of the GATT.	Since the Congo's independence in 1960, Canada has continued to grant most-favoured-nation treatment.
COSTA RICA.....	<i>Modus vivendi</i> signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CUBA.....	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment.
CZECHOSLOVAKIA.....	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation treatment.
DAHOMEY.....	Franco-Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective Aug. 1, 1960.	Exchange of most-favoured-nation treatment.
DENMARK (INCLUDING GREENLAND).	Treaties of Peace and Commerce with Britain of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means for separate termination by Dominions on one years notice.
DOMINICAN REPUBLIC.....	Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment.
ECUADOR.....	<i>Modus vivendi</i> signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EGYPT.....	(See United Arab Republic.)	
EL SALVADOR.....	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.
ETHIOPIA.....	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FINLAND.....	Exchange of notes of Nov. 13-17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FRANCE AND FRENCH OVERSEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.
GABON.....	Franco-Canadian Trade Agreement of 1933 applied to Gabon. GATT effective Aug. 17, 1960.	Exchange of most-favoured-nation treatment.
GERMANY, FEDERAL REPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
GREECE.....	<i>Modus vivendi</i> by exchange of notes of July 24-28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968—continued**

Country	Agreement	Tariff Treatment
GREENLAND.....	(See Denmark.)	
GUATEMALA.....	Trade Agreement signed Sept. 23, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
GUINEA.....	Franco-Canadian Trade Agreement of 1933 applied to Guinea.	Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment.
HAITI.....	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment.
HONDURAS.....	Exchange of notes signed July 11, 1956, effective July 18, 1956. Ratified in Honduras Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
HUNGARY.....	Trade Agreement signed June 11, 1964 for three-year period. Renewed Aug. 9, 1968 for a further three years from date of renewal.	Exchange of most-favoured-nation treatment and undertaking by Hungary to purchase Canadian goods to a value of \$15,000,000 during the three-year validity of new Agreement.
ICELAND.....	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and Britain on Feb. 13, 1960. GATT effective Apr. 21, 1968.	Exchange of most-favoured-nation treatment.
INDONESIA.....	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation treatment.
IRAN.....	Special arrangement by Order in Council effective Feb. 1, 1951. Iran accorded most-favoured-nation treatment from Sept. 5, 1956.	Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.
IRAQ.....	Special arrangement by Order in Council effective Sept. 15, 1951.	Exchange of most-favoured-nation tariff treatment.
IRELAND.....	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933. Modified by exchange of letters on Dec. 21, 1967. GATT effective Dec. 22, 1967.	Canada grants British preferential tariff in return for some bindings of tariff rates, preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice.
ISRAEL.....	GATT effective July 5, 1962.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
ITALY.....	<i>Modus vivendi</i> by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
IVORY COAST.....	Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast. GATT effective Aug. 7, 1960.	Exchange of most-favoured-nation treatment.
JAPAN.....	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
KOREA, REPUBLIC OF.....	Trade Agreement signed Dec. 20, 1966. GATT effective Apr. 14, 1967.	Exchange of most-favoured-nation treatment.
KUWAIT.....	GATT effective June 18, 1961.	Since independence of Kuwait in June 1961, Canada has continued to accord most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968—continued**

Country	Agreement	Tariff Treatment
LAOS.....	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.
LEBANON.....	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.
LIBERIA.....	Special arrangement by Order in Council effective Mar. 1, 1955.	Canada grants most-favoured-nation treatment.
LIECHTENSTEIN.....	(See Switzerland.)	
LUXEMBOURG.....	(See Belgium-Luxembourg.)	
MALAGASY REPUBLIC.....	Franco-Canadian Trade Agreement of 1933 applied to Malagasy Republic. GATT effective June 25, 1960.	Exchange of most-favoured-nation treatment.
MALI, FEDERATION OF.....	Franco-Canadian Trade Agreement of 1933 applied to Mali. Mali maintains a <i>de facto</i> application of the GATT.	Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.
MAURITANIA.....	Franco-Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective Nov. 28, 1960.	Exchange of most-favoured-nation treatment.
MEXICO.....	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
MOROCCO.....	Various agreements relating to former French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.
NETHERLANDS.....	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
NICARAGUA.....	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment.
NIGER.....	Franco-Canadian Trade Agreement of 1933 applied to Niger. GATT effective Aug. 3, 1960.	Exchange of most-favoured-nation treatment.
NORWAY.....	Convention of Commerce and Navigation with U.K. of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
PANAMA.....	Order in Council of July 20, 1935, accepted Article 12 of U.K.-Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
PARAGUAY.....	Exchange of notes of May 21, 1940; in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
PERU.....	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968—continued**

Country	Agreement	Tariff Treatment
PHILIPPINES.....	No agreement.	Canada and Philippines continue to exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States) without contractual obligation.
POLAND.....	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936. GATT effective Oct. 18, 1967.	Canada grants most-favoured-nation treatment.
PORTUGAL, PORTUGUESE ADJACENT ISLANDS AND PORTUGUESE OVERSEAS PROVINCES.	Trade Agreement signed May 28, 1954 provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955. GATT effective May 6, 1962.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.
ROMANIA.....	Trade Agreement signed Mar. 22, 1968.	Exchange of most-favoured-nation treatment and Romanian undertaking to purchase Canadian goods to value of \$9,000,000 during three-year validity of Trade Agreement,
RWANDA.....	GATT effective Jan. 1, 1966.	Canada grants most-favoured-nation treatment.
SENEGAL.....	Franco-Canadian Trade Agreement of 1933 applied to Senegal. GATT effective June 20, 1960.	Exchange of most-favoured-nation treatment.
SOUTH AFRICA.....	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932.	Exchange of British preferential rates on scheduled items. May be terminated on six months notice.
	Exchange of notes Aug. 2-31, 1935; effective retroactively from July 1, 1935. GATT effective June 14, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
SPAIN AND SPANISH POSSESSIONS.	Since Aug. 1, 1928, Canada has adhered to U.K.-Spain Treaty of Commerce of Oct. 31, 1922.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
	Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955. GATT effective Aug. 29, 1963.	Supplements and amends U.K.-Spain Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice.
SWEDEN.....	U.K.-Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. GATT effective May 1, 1966.	Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by the Dominions on one years notice.
SWITZERLAND.....	U.K.-Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 8, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947. GATT effective Aug. 1, 1966.	Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914 provides means for separate termination by the Dominions on one years notice.
SYRIAN ARAB REPUBLIC.....	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment.
TOGO.....	Franco-Canadian Trade Agreement of 1933 applied to Togo. GATT effective Apr. 27, 1960.	Since the creation of Togo as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.
TUNISIA.....	Franco-Canadian Trade Agreement of 1933 applied to Tunisia. Tunisia has acceded to GATT provisionally.	Since the creation of Tunisia as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries
as at Dec. 1, 1968—concluded**

Country	Agreement	Tariff Treatment
TURKEY.....	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
UNION OF SOVIET SOCIALIST REPUBLICS.	Trade Agreement signed Feb. 29, 1956, renewed for another three years Apr. 18, 1960 and again for the same period on Sept. 16, 1963 and again for the same period on June 20, 1966 (the extension to be valid from Apr. 18, 1966).	Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase a minimum of 6,375,000 long tons of wheat and flour during the three-year period of validity of the extended agreement.
UNITED ARAB REPUBLIC (EGYPT).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952. The United Arab Republic has acceded provisionally to the GATT.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
UNITED STATES.....	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment exchanged.
UPPER VOLTA.....	Franco-Canadian Trade Agreement of 1933 applies to Upper Volta. GATT effective Aug. 5, 1960.	Exchange of most-favoured-nation treatment.
URUGUAY.....	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Most-favoured-nation treatment.
VENEZUELA.....	<i>Modus vivendi</i> signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal.
VIET-NAM.....	Franco-Canadian Trade Agreement of 1933 applied to Viet-Nam.	Since the creation of Viet-Nam as an independent state in 1955, Canada has continued to accord most-favoured-nation rates.
YUGOSLAVIA.....	Trade Agreements Act of June 11, 1928, accepted Article 30 of U.K.-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. GATT effective Aug. 25, 1966.	Exchange of most-favoured-nation treatment.

PART IV.—TRAVEL BETWEEN CANADA AND OTHER COUNTRIES*

Canada's Centennial celebrations, especially Expo 67, attracted a record number of visitors during 1967 and receipts from these visitors exceeded \$1,250,000,000. Also, for perhaps the same reason, there was some curtailment in the number of Canadians travelling abroad and the amount spent on such travel was estimated at \$900,000,000, unchanged from 1966. Thus, a surplus of \$100,000,000 on travel account was estimated for 1967, in sharp contrast to the deficit of \$60,000,000 recorded for 1966.

Close to 40,000,000 non-residents entered Canada from the United States in 1967, an increase of 13.2 p.c. over the previous year, and their expenditures in Canada, at some

* Prepared in the Travel Statistics Section, Economic Accounts Branch, Dominion Bureau of Statistics.

\$1,164,000,000, made up the bulk of the total travel receipts, a gain of 59.5 p.c. over 1966. Canadians returning from visits to the United States numbered 32,500,000 compared with 34,700,000 in 1966 and their estimated payments remained almost unchanged at \$629,000,000. In 1967, the surplus on travel account with the United States surged to \$536,000,000 compared with a credit of \$102,000,000 in 1966.

The number of overseas visitors entering Canada was also exceptionally high in 1967; at 539,000, they outnumbered Canadians returning from overseas countries by 17,000. However, the higher outlay made by each Canadian on a trip overseas brought their total travel payments to \$274,000,000, a sum considerably above the estimated receipts in Canada from overseas visitors, which approached \$150,000,000; in 1966, Canadian travel payments overseas amounted to \$272,000,000 and receipts from overseas visitors \$110,000,000. The balance of payments on travel account with countries other than the United States again stood in a debit position in 1967, although the deficit at \$124,000,000, was more favourable than the previous year's record of \$162,000,000.

Travel Between Canada and the United States.—Almost 39,976,000 United States residents spent an estimated \$1,164,223,000 in Canada in 1967, including 24,511,000 persons entering and leaving on the same day (excursionists and commuters) who spent \$121,474,000. The latter short-term traffic formed 61 p.c. of the total entries but only 11 p.c. of the aggregate expenditures. Travellers remaining one or more nights, who may be referred to as tourists, numbered 15,464,400 and spent an estimated \$1,039,749,000—39 p.c. of the volume and 89 p.c. of the expenditures.

The most important means of transportation used to enter Canada was the automobile. In 1967, 12,212,800 cars carried 31,582,700 United States travellers to Canada, an increase of 17.5 p.c. in the number of persons compared with 1966. Of the total, 12,597,200 automobile visitors stayed one or more nights in Canada and during their visits spent \$662,600,000, over 50 p.c. of the total receipts from the United States. Significant gains in numbers were also shown by other means of travel from the United States—1,457,800 persons came by bus, more than double the 1966 traffic; 1,177,100 came by 'plane, 65.8 p.c. over 1966; 309,300 came by rail, 10.1 p.c. fewer than in 1966; and 607,100 came by boat, an increase of 10.1 p.c. Persons entering by bus spent \$161,000,000, by air \$177,000,000, by rail \$33,000,000, and by boat \$12,600,000.

Travel payments to the United States (excluding Hawaii) by Canadian travellers amounted to \$616,000,000 in 1967. As stated above, Canadian residents returning from the United States after a visit were down in number from 34,679,900 in 1966 to 32,499,900 in 1967. The decrease occurred in the short-term category; 24,708,900 left and returned on the same day, about 10 p.c. fewer than in 1966, and spent \$59,154,000 in the United States; 7,791,000 remained one or more nights and spent an estimated \$557,150,000, an increase of 7.4 p.c. in volume and a slight decrease in expenditures compared with 1966.

A voluntary questionnaire survey was used to secure information on the travel habits of Canadians travelling in the United States during 1967. The results showed that 41.3 p.c. of those replying were residents of Ontario and their expenditures made up 45.2 p.c. of the total payments to that country. Quebec accounted for 20.0 p.c. of the numbers and 24.3 p.c. of the expenditures. Of those responding, some 53.3 p.c. stated holiday or recreation as the reason for travelling to the United States, 26.6 p.c. visited friends or relatives, and 7.9 p.c. indicated business as the reason. The highest percentage of holiday trips (63) was reported by Quebec residents, and the highest percentage of visits to friends or relatives (29) and business trips (10) were attributed to re-entries in Ontario.

1.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, 1958-67

Year	U.S. Travellers in Canada	U.S. Expenditure in Canada	Canadians Travelling in U.S.	Canadian Expenditure in U.S. ¹	Excess of U.S. Travellers in Canada	Balance of Payments with the U.S.
	No.	\$'000	No.	\$'000	No.	\$'000
1958.....	28,530,700	309,396	27,421,700	413,327	+1,109,000	-103,931
1959.....	29,880,800	351,070	27,989,900	448,413	+1,890,900	-97,343
1960.....	29,654,600	375,149	29,045,800	462,324	+608,800	-87,175
1961.....	30,474,200	435,317	29,288,500	458,720	+1,185,700	-23,412
1962.....	31,656,400	512,407	27,944,600	419,113	+3,711,800	+93,294
1963.....	31,864,800	548,871	29,389,800	387,640	+2,475,000	+161,231
1964.....	32,463,100	590,148	32,164,100	481,092	+299,000	+109,056
1965.....	33,887,300	659,843	33,433,400	548,377	+453,900	+111,466
1966.....	35,325,000	729,932	34,679,900	628,150	+645,100	+101,782
1967.....	39,975,600	1,164,223	32,499,900	628,722	+7,475,700	+535,501

¹ Includes Hawaii from 1960.

2.—Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, by Means of Travel and Length of Stay, 1966 and 1967

Year and Item	U.S. Travellers in Canada ¹	U.S. Expendi- ture in Canada	Canadians Travelling in the U.S. ¹	Canadian Expenditure in the U.S.	Excess of U.S. Travellers in Canada	Excess of U.S. Expenditure in Canada
	No.	\$'000	No.	\$'000	No.	\$'000
1966						
Short-Term (entering and leaving the same day).....	22,507,300	78,655	27,422,500	57,574	-4,915,200	+21,081
Automobile.....	15,829,300	41,710	22,494,500	42,099	-6,665,200	+389
Aircraft.....	38,200	1,260	27,900	1,623	+10,300	+363
Bus.....	120,000	971	20,800	457	+99,200	+514
Rail.....	148,000	279	3,900	82	+144,100	+1
Boat.....	218,400	1,527	24,300	79	+194,100	+1,448
Other (pedestrians, local bus, etc.)	6,153,400	32,908	4,851,100	13,234	+1,302,300	+19,674
Long-Term (remaining one or more nights).....	12,817,700	651,277	7,257,400	558,576	+5,560,300	+92,701
Automobile.....	11,038,800	432,019	5,763,500	318,095	+5,275,300	+113,924
Aircraft.....	671,600	103,686	676,600	149,169	+5,000	+45,483
Bus.....	577,900	76,084	530,900	59,695	+47,000	+16,389
Rail.....	196,200	30,017	172,600	28,336	+23,600	+1,681
Boat.....	333,200	9,471	113,800	3,281	+219,400	+6,190
Totals, 1966.....	35,325,000	729,932	34,679,900	616,150²	+645,100	+113,782
1967						
Short-Term (entering and leaving the same day).....	24,511,200	124,474	24,708,900	59,154	-197,700	+65,320
Automobile.....	18,985,500	88,337	21,816,300	37,676	-2,830,800	+50,661
Aircraft.....	56,500	1,544	32,600	1,447	+23,900	+97
Bus.....	261,500	2,749	49,500	253	+212,000	+2,496
Rail.....	65,800	279	3,200	77	+62,600	+202
Boat.....	300,300	1,785	35,700	183	+264,600	+1,602
Other (pedestrians, local bus, etc.)	4,841,600	29,780	2,771,600	19,518 ²	+2,070,000	+10,262
Long-Term (remaining one or more nights).....	15,464,400	1,039,749	7,791,000	557,150	+7,673,400	+482,599
Automobile.....	12,597,200	662,593	6,268,400	325,291	+6,328,800	+337,302
Aircraft.....	1,120,600	175,413	759,100	152,336	+361,500	+23,077
Bus.....	1,196,300	158,251	527,900	53,685	+668,400	+104,566
Rail.....	243,500	32,686	144,400	23,254	+99,100	+9,432
Boat.....	306,800	10,806	91,200	2,584	+215,600	+8,222
Totals, 1967.....	39,975,600	1,164,223	32,499,900	616,304²	+7,475,700	+547,919

¹ Includes substantial amounts of in-transit, commuting, and local traffic.² Excludes Hawaii.³ Includes transportation fares paid to United States carriers by Canadians travelling overseas via the United States.

3.—Highway Traffic at Canadian Border Points, 1966 and 1967

Year and Province or Territory	Foreign Vehicles Inward ¹				Canadian Vehicles Returning		
	Entering and Leaving the Same Day ²	One or More Nights in Canada	Repeats and Taxis	Com- mercial Vehicles	Leaving and Returning the Same Day	One or More Nights in U.S.	Com- mercial Vehicles
	No.	No.	No.	No.	No.	No.	No.
1966							
Atlantic Provinces.....	337,622	212,872	923,487	59,077	2,061,327	134,422	131,010
Quebec.....	362,634	373,613	146,501	100,418	1,386,422	633,702	175,271
Ontario.....	3,681,865	3,044,349	662,050	298,794	3,963,766	745,026	366,053
Manitoba.....	54,924	63,838	64,254	20,101	172,562	84,911	22,851
Saskatchewan.....	29,415	33,016	17,573	12,086	86,212	31,525	6,794
Alberta.....	19,449	62,601	19,706	11,505	56,341	37,647	6,275
British Columbia.....	268,718	433,012	59,833	72,781	1,010,299	270,738	28,313
Yukon Territory.....	3,383	28,684	516	3,617	1,177	1,320	472
Totals, 1966.....	4,758,010	4,256,985	1,893,920	576,379	8,738,106	1,939,291	737,039
1967							
Atlantic Provinces.....	1,271,937	203,169	*	61,537	1,999,678	153,553	131,234
Quebec.....	890,175	1,044,268	*	103,723	1,310,972	627,851	174,875
Ontario.....	5,335,877	2,319,553	*	320,313	3,841,315	806,902	379,746
Manitoba.....	136,490	108,418	*	16,787	189,434	117,263	22,353
Saskatchewan.....	49,946	33,807	*	11,075	87,711	40,276	7,708
Alberta.....	38,483	65,667	*	12,630	56,149	41,857	6,703
British Columbia.....	447,104	397,534	*	66,738	1,132,047	316,129	31,565
Yukon Territory.....	2,145	26,851	*	2,073	950	1,593	489
Totals, 1967.....	8,172,157	4,199,267	*	594,876	8,618,256	2,105,424	754,673

¹ Port administrative procedures used prior to Mar. 1, 1967 appear to have resulted in an overstatement of vehicles staying one or more nights in Canada and a corresponding understatement of same day traffic. ² Includes the classification "Repeats and Taxis" in 1967. ³ See footnote 2.

Travel Between Canada and Overseas Countries.—Unparalleled interest was shown in Canada by travellers from overseas during 1967 when 539,000 visited this country, an increase of 31.2 p.c. over 1966. These visitors spent an estimated \$146,000,000 (including transportation fares paid to Canadian carriers), compared with \$110,000,000 spent by overseas visitors in 1966.

Reports submitted by border officials show that 129,000 of the overseas visitors were residents of the United Kingdom, 72,000 of France, 42,000 of Germany and 19,000 of each of the Netherlands, Switzerland, Mexico and Japan. Overseas visitors entering through ports in Quebec numbered 302,000, an increase of 124.9 p.c. over 1966; Montreal airport alone reported 226,000 entries, some 163.0 p.c. more than in the preceding year. Arrivals in Ontario numbered 172,000; this was a decrease of 19.2 p.c. from the 1966 figure but visitors entering at Toronto airport increased 4.9 p.c. to 97,000. British Columbia ports reported 38,000 entries, up 2.6 p.c.; 23,000 of them entered at Vancouver airport, an increase of 40.5 p.c. over 1966. Persons entering from overseas through ports in the Prairie Provinces and the Atlantic Provinces numbered 16,000 and 11,000, respectively.

Canadians returning from visits to overseas countries in 1967 numbered 522,000, an increase of 3.8 p.c. over 1966. Their expenditures overseas were estimated at \$274,000,000, including payments to overseas carriers for transportation. A breakdown by areas shows that \$98,000,000 was spent in the United Kingdom, \$110,000,000 in OECD countries in Europe, \$37,000,000 in other Commonwealth countries, and \$29,000,000 elsewhere.

From the response to questionnaires distributed to Canadians returning from overseas countries, information was obtained on province of residence, purpose of trip, and length of stay. Replies indicated that 47 p.c. resided in Ontario, 23 p.c. in Quebec and 14 p.c. in British Columbia. About 54 p.c. of the travel overseas was for recreation or holiday, 33 p.c. for visits to friends or relatives and 11 p.c. for business. The average length of stay of Canadians travelling in overseas countries was 26.5 days. About 437,000 Canadians returned direct from overseas countries and an estimated 85,000 re-entered Canada by way of the United States.

CHAPTER XXIII.—GOVERNMENT FINANCE*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

Consolidated statistics of revenue and expenditure for all governments in Canada—federal, provincial and municipal—are presented in Section 1 of this Chapter and Section 2 covers the incidence of taxation at the three levels. More detailed information for each level of government is given in Sections 3, 5 and 6. Section 4 gives information on joint federal-provincial programs and on the extent of federal financial participation in such programs.

Section 1.—Consolidated Government Finance Statistics

Tables 1 and 2 provide details of the federal and provincial-municipal government components of consolidated net general revenue by source, and consolidated net general expenditure by function. The object of these consolidations is to reflect the relationship between government and the public in respect of revenue raised and services provided. The consolidated net general figures were arrived at by eliminating from the gross revenue and the corresponding functionalized expenditure of each level of government, the following: conditional grants (grants-in-aid and shared-cost contributions); institutional revenue; and interest, premium, discount and exchange revenue. In addition, transfers of unconditional grants such as subsidy payments of the Federal Government to provincial governments have also been eliminated from the gross revenue of the receiving government and from the gross expenditure of the paying government. Because of the differing accounting practices of governments and the variations in fiscal year-ends, some discrepancies appear between amounts recorded as inter-government transfers received and those recorded as paid.

* Except as otherwise indicated, revised in the Governments Division, Dominion Bureau of Statistics.

1.—Consolidated Revenue of All Governments, by Source, 1964 and 1965

(After elimination of inter-government transfers)

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Source	1964			1965		
	Federal	Provincial-Municipal	Total	Federal	Provincial-Municipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—						
Income—						
Corporations.....	1,669,065	455,076	2,124,141	1,758,870	523,486	2,282,356
Individuals.....	2,535,182	507,727	3,042,909	2,637,356	834,353	3,471,709
Income on certain payments and credits to non-residents.....	143,718	—	143,718	170,019	—	170,019
General sales.....	1,587,761	730,392	2,318,153	1,917,215	813,339	2,730,554
Motor fuel and fuel oil sales.....	—	616,077	616,077	—	679,593	679,593
Other sales.....	—	77,942	77,942	—	113,663	113,663
Excise duties and taxes.....	679,243	—	679,243	740,409	—	740,409
Customs import duties.....	622,102	—	622,102	685,519	—	685,519
Real and personal property.....	—	1,716,081	1,716,081	—	1,731,112	1,731,112
Business.....	—	54,635	54,635	—	60,477 ¹	60,477
Estate taxes and succession duties.....	88,626	92,229	180,855	108,353	107,892	216,245
Other.....	140	325,585	325,725	161	289,876 ²	290,037
Totals, Taxes.....	7,325,837	4,575,744	11,901,581	8,017,902	5,153,791	13,171,693
Privileges, Licences and Permits—						
Liquor control and regulation.....	—	59,993	59,993	—	61,926	61,926
Motor vehicles.....	—	221,720	221,720	—	243,953	243,953
Natural resources.....	5,601	440,447	446,048	12,115	508,328	520,443
Other.....	22,382	72,959	95,341	26,507	77,834	104,341
Totals, Privileges, Licences and Permits.....	27,983	795,119	823,102	38,622	892,041	930,663
Sales and services.....	109,967	100,836	210,803	108,215	111,780	219,995
Fines and penalties.....	1,984	49,936	51,920	2,741	59,470	62,211
Contributions from Government Enterprises—						
Own Enterprises—						
Liquor boards and commissions..	—	250,531	250,531	—	298,158	298,158
Other.....	139,445	54,997	194,442	156,541	57,044	213,585
Federal and provincial in lieu of taxes.....	—	5,764	5,764	—	15,293	15,293
Other revenue.....	312,968	112,376	425,344	370,531	110,585	481,116
Totals.....	7,918,184	5,945,303		8,694,552	6,698,162³	
Consolidated Net General Revenue.....			13,863,487			15,392,714

¹ Incomplete; not separable from real property taxes in some provinces.² Includes hospital insurance premiums \$184,071,000.³ An amount of \$1,899,000 has been eliminated from the revenue of the Province of Quebec. This amount represents compensation due to withdrawal from a Category II program under the Established Programs (Interim Arrangements) Act and as such is treated as a conditional grant in this table.

2.—Consolidated Expenditure of All Governments, by Function, 1964 and 1965

(After elimination of inter-government transfers)

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Function	1964			1965		
	Federal	Provincial-Municipal	Total	Federal	Provincial-Municipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Defence services and mutual aid....	1,562,405	—	1,562,405	1,571,539	—	1,571,539
Veterans' pensions and other benefits	356,246	—	356,246	372,160	—	372,160
Health—						
Hospital care.....	470,826	743,948	1,214,774	355,847	1,001,554	1,357,401
Other.....	64,905	134,071	198,976	70,435	141,691	212,126
Totals, Health.....	535,731	878,019	1,413,750	426,282 ¹	1,143,245	1,569,527
Sanitation and waste removal.....	—	190,704	190,704	—	199,015	199,015
Social Welfare—						
Aid to unemployed and unemployables.....	169,703	157,326	327,029	203,396	199,657	403,053
National employment services.....	54,293	—	54,293	26,335	—	26,335
Aid to blind and disabled persons.....	28,990	29,452	58,442	18,611	37,890	56,501
Old age assistance ²	46,975	53,268	100,243	28,431	65,850	94,281
Old age security fund ³	885,294	—	885,294	927,299	—	927,299
Other aid to the aged ⁴	—	30,346	30,346	—	36,859	36,859
Family allowances.....	550,764	—	550,764	555,686	—	555,686
Other.....	106,559	132,718	239,277	112,381	172,191	284,572
Totals, Social Welfare.....	1,842,578	403,110	2,245,688	1,872,139 ¹	512,447	2,384,586
Education.....	215,713	2,234,713	2,450,426	289,030 ¹	2,325,695	2,614,725
Transportation and Communications—						
Highways, roads and bridges.....	130,701	1,232,984	1,363,685	133,008	1,428,453	1,561,461
Other.....	399,977	8,393	408,370	465,399	8,442	473,841
Totals, Transportation and Communications.....	530,678	1,241,377	1,772,055	598,407	1,436,895	2,035,302
Natural resources and primary industries.....	380,623	242,920	623,543	443,940	286,937 ⁵	730,877
Debt charges (excluding debt retirement).....	791,455	355,331	1,146,786	897,030	361,119	1,258,149
Contributions to own government enterprises.....	181,713	31,028	212,741	162,743	98,598	261,341
Other Expenditure—						
General government.....	267,223	375,554	642,777	339,535	431,479	771,014
Protection of persons and property.....	137,670	509,879	647,549	163,067	590,472	743,539
International co-operation and assistance.....	107,758	—	107,758	126,410	—	126,410
Recreation and cultural services.....	44,734	149,438	194,172	57,733	187,297	245,030
Other.....	566,464	290,891	857,355	702,009	323,371	1,025,380
Totals, Other Expenditure.....	1,123,849	1,325,762	2,449,611	1,388,754	1,522,619	2,911,373
Totals.....	7,520,991	6,902,964		8,022,024¹	7,886,570¹	
Consolidated Net General Expenditure.....			14,423,955			15,908,594

¹ Adjustments have been made to the expenditure data published in the source document—*Federal Government Finance*, Catalogue No. 68-211, Table 2. Amounts of \$54,903,000, \$19,144,000 and \$7,415,000 paid to the Province of Quebec have been deducted from the classifications Health, Social Welfare and Education, respectively. In the source document the amounts are treated as grants-in-aid; for purposes of this table they are classified as unconditional transfers under the Established Programs (Interim Arrangements) Act. The total of \$51,462,000 was eliminated upon consolidation. ² Federal—payments to provinces of the federal share of assistance under the Old Age Assistance Act; Provincial-Municipal—payments of old age pensions to individuals. ³ Payments of old age pensions to individuals under the Old Age Security Fund. ⁴ All provincial aid other than pensions, municipal contributions to homes for the aged, administration, and other miscellaneous items. ⁵ An amount of \$1,899,000 has been eliminated from the expenditure of the Province of Quebec. See footnote 3, Table 1.

Section 2.—Taxation in Canada*

Canada is a federal state with a central government and ten provincial governments. In 1867 the principal colonies of the British Crown in North America joined together to form the nucleus of a new nation and the British North America Act of that year became its written constitution. This statute created a central government with certain powers while continuing the existence of political subdivisions called provinces with powers of their own.

Under the British North America Act the Parliament of Canada has the right to raise "money by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the province in order to the raising of a revenue for provincial purposes". Thus, the provinces have a right to share only in the field of direct taxation while the Federal Government is not restricted in any way in matters of taxation. The British North America Act also empowers the provincial legislatures to make laws regarding "municipal institutions in the province". This means that the municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned. Thus, municipalities are also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". This conception has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under the guidance of provincial legislation, tax real estate, water consumption and places of business. The Federal Government levies direct taxes on income, on gifts and on the estates of deceased persons, and indirect taxes such as excise taxes, excise and customs duties, and a sales tax.

The increasing use by both the federal and the provincial governments of their rights in the field of direct taxation in the 1930s resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of federal-provincial tax agreements were concluded to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under the earlier agreements, the participating provinces undertook, in return for compensation, not to use or permit their municipalities to use certain of the direct taxes. Under the present arrangements, the federal income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces are abated by certain percentages to make room for provincial levies.

The current arrangements became operative on Apr. 1, 1962 and were originally scheduled to terminate on Mar. 31, 1967, but have been extended subject to termination on due notice being given. They amount to a partial federal withdrawal from the field of direct taxation and a re-entry of all provinces into the vacated area. The federal personal income tax otherwise payable on income earned in a province and on income received by a resident of a province is reduced by the following percentages: 16 p.c. for 1962 income, 17 p.c. for 1963 income, 18 p.c. for 1964 income, 21 p.c. for 1965 income, 24 p.c. for 1966 income and 28 p.c. for income in 1967 and subsequent years.† The abatements in respect of income earned in Quebec or received by a resident of Quebec are 44 p.c. for 1965 income, 47 p.c. for 1966 income and 50 p.c. for income in 1967 and subsequent years. The additional points of abatement in Quebec are to allow that province to collect revenue to pay for certain programs that are paid for in whole or in part by the Federal Government in other provinces. The Federal Government also reduces its rate of corporation income tax on taxable income of corporations earned in the provinces. The reduction was 9 p.c. of taxable income earned in any province except Quebec and 10 p.c. of taxable income earned in Quebec for the years from 1962 to 1967. The additional 1-p.c. reduction in respect of taxable income earned in the Province of Quebec for these years was to compensate for the additional tax levied by the province during this period on

* Revised (March 1969) in the Tax Policy Division, Department of Finance, under the direction of F. R. Irwin, Director of the Division, and by the provincial authorities concerned.

† The original agreement provided for abatements of 19 p.c. for 1965 income and 20 p.c. for 1966 income. However, in 1964 the provinces were granted an additional two percentage points for 1965 income and four percentage points for 1966 income and in 1966 they were granted an additional four percentage points for 1967 and 1968 income.

corporation income to provide grants to universities. These provincial grants replaced federal grants which in other provinces were paid to the universities by the Federal Government through the Canadian Universities Foundation. Starting in 1967, with the termination of direct federal financial assistance to universities, the abatement of the federal rate of corporation income tax is 10 p.c. of taxable income in all provinces. The Federal Government also abates the federal estate tax otherwise payable by 75 p.c. in respect of property situated in a province that levies its own death tax.*

These reductions in federal income tax and estate tax do not apply to the Yukon Territory or the Northwest Territories or to income earned outside Canada. The Yukon and Northwest Territories do not impose income taxes or death taxes.

The provincial tax rates are not restricted to the extent of the federal withdrawal. The constitutional position of the provinces permits them unlimited use of direct taxes for the raising of revenue for provincial purposes. However, in five provinces (Prince Edward Island, Nova Scotia, New Brunswick, Alberta and British Columbia), the provincial rates of income tax do not exceed the federal abatement.

As part of the current fiscal arrangements, the Federal Government has entered into tax collection agreements under which it collects the provincial personal income taxes for all provinces except Quebec and the provincial corporation income taxes for all provinces except Ontario and Quebec.

Subsection 1.—Federal Taxes

Individual Income Tax

Personal income taxation in Canada is on the basis of residence rather than citizenship. Every individual who is resident in Canada at any time during a year is liable for the payment of income tax on all his income. Every non-resident individual who is employed or carries on business in Canada during a year is liable for tax on his income earned in Canada. The term "residence" is difficult to define simply but, generally speaking, it is taken to be the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also extensions of the meaning of Canadian resident to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada or an ambassador, a high commissioner, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of residence also includes employees who go from Canada to work under certain international development assistance programs.

The Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from all businesses, property, offices and employments. It does not include capital gains unless they arise out of the conduct of a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, fees, annuities, pension benefits, allowances, interest, alimony, maintenance payments and other miscellaneous sources of income. On the other hand, war service disability pensions paid by Canada or an ally of Her Majesty at the time of the war service, unemployment insurance benefits, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family allowances do not have to be included in the computation of income.

In computing his income for a taxation year, an individual who is carrying on business may deduct business expenses including depreciation (called capital cost allowances),

* The original agreement was for a 50-p.c. abatement but at the conclusion of a federal-provincial conference in late 1963 it was increased to 75 p.c. in respect of deaths occurring after Mar. 31, 1964. Currently, only the estates of domiciliaries of British Columbia qualify for the full 75-p.c. abatement. Quebec and Ontario estates are temporarily eligible for only 50 p.c. because they have elected for the time being to take a payment from the Federal Government on account of the additional 25-p.c. abatement rather than to increase their succession duty rates.

interest on borrowed money, reserves for doubtful debts, contributions to pension plans or deferred profit-sharing plans for his employees, bad debts, and expenses incurred for scientific research. In general, no deductions are allowed in computing income from salary and wages, although there are exceptions such as travelling expenses of employees who have to travel as they perform their work (such as employees on trains), union dues, alimony payments and contributions to registered pension plans. Individuals may deduct, within limits, amounts set aside to provide a future income under registered retirement savings plans. Students attending universities, colleges, high schools, public schools or certain other certified educational institutions in Canada may deduct their tuition fees if they exceed \$25 per annum. Students in full-time attendance at universities outside Canada may deduct their tuition fees.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions. These exemptions and deductions are as follows: for single status, \$1,000; for married status, \$2,000; for dependent children under age 16, \$300 per child; for other dependants (as defined in the law), \$550 per dependant; where the taxpayer is 70 years of age or over (or between 65 and 70 years of age and not in receipt of an old age security pension), an additional \$500; where the taxpayer is blind or confined to a bed or a wheelchair, an additional \$500; charitable donations, up to 10 p.c. of income; and medical expenses, in excess of 3 p.c. of income. In lieu of claiming deductions for charitable donations and medical expenses, an individual may claim a standard deduction of \$100.

As already stated, an individual who is resident in Canada is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed only on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. (A non-resident who derives investment income from Canada is taxed in a different way described on p. 1043.) An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year will be subject to income tax in Canada on only that part of his income for the year received while he is resident in Canada. In these circumstances, the deductions from income permitted for determining taxable income will be the amount that may reasonably be considered as applicable to the period during which he is resident in Canada.

A progressive schedule of rates is applied to taxable income, beginning at 11 p.c. on the first \$1,000 of taxable income and increasing to 80 p.c. on taxable income in excess of \$400,000. In addition, an old age security tax is levied on taxable income at the rate of 4 p.c. with a maximum of \$240 reached at \$6,000 of taxable income. Starting in 1969 an additional tax, called a social development tax at the rate of 2 p.c. of taxable income with a maximum of \$120, is imposed. For the years 1968 and 1969 there is also a temporary surtax of 3 p.c. of the amount of basic tax in excess of \$200. ("Basic tax" is personal income tax, excluding the old age security tax, the social development tax and the temporary surtax and after deduction of the dividend tax credit but before the abatement for provincial income tax or the general tax reduction of 20 p.c. with a maximum of \$20.)

An individual is allowed a deduction from his tax under four main headings. (1) *Dividend Tax Credit*—to partially eliminate the double taxation of corporate profits and to encourage participation in the ownership of Canadian companies, Canadian resident individuals are allowed to deduct from their tax an amount equal to 20 p.c. of the net dividends they receive from Canadian taxable companies. (2) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax related to such income. (3) *Abatement under Federal-Provincial Fiscal Arrangements*—the federal basic tax otherwise payable on income of a resident of a province and on income earned in a province is reduced by 28 p.c., except in the case of income earned in Quebec or received by a resident

of Quebec where it is reduced by 50 p.c. (see p. 1038). (4) *General Tax Reduction*—all individuals may deduct from their tax an amount equal to the lesser of 20 p.c. of their basic tax or \$20.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages have tax deducted from their pay by their employer and in this way pay nearly 100 p.c. of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return on or before Apr. 30 in the following year. Persons with more than 25 p.c. of their income from sources not subject to tax deductions must pay tax by quarterly instalments throughout the year and returns must be filed on or before Apr. 30 in the following year. Farmers and fishermen pay two thirds of their tax on or before Dec. 31 each year and the remainder on or before Apr. 30 in the following year.

The following statement shows what taxpayers pay (1969) at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of \$100 and no allowance has been made for the 20-p.c. dividend tax credit.

<i>Status</i>	<i>Income</i>	<i>Income Tax including Social Development Tax and Surtax</i>	<i>Old Age Security Tax</i>
	\$	\$	\$
Single taxpayer—no dependants.....	1,200	11	4
	1,500	43	16
	2,000	97	36
	2,500	174	56
	3,000	255	76
	5,000	661	156
	10,000	1,989	240
	20,000	6,094	240
	50,000	21,688	240
	100,000	52,475	240
Married taxpayer—no dependants.....	2,200	11	4
	2,500	43	16
	3,000	97	36
	5,000	447	116
	10,000	1,684	240
	20,000	5,630	240
	50,000	21,121	240
	100,000	51,805	240
Married taxpayer—two children under age 16....	2,800	11	4
	3,000	32	12
	5,000	330	92
	10,000	1,524	240
	20,000	5,352	240
	50,000	20,782	240
	100,000	51,403	240

The income taxes shown above are the combined federal and provincial taxes in provinces where the provincial tax is the same as the federal abatement (i.e., in Newfoundland, Nova Scotia, Prince Edward Island, Ontario and British Columbia). In Quebec the provincial tax approximates the amount of the federal abatement; in New Brunswick, Manitoba, Saskatchewan and Alberta the provincial tax exceeds the abatement.

Corporation Income Tax

The Income Tax Act levies a tax upon the income from everywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts, and interest on borrowed money. They may not deduct provincial income taxes other than provincial taxes on income derived from mining operations. (For this purpose "income from mining operations" is specially defined.)

Regulations covering capital cost allowances (depreciation) permit taxpayers to deduct over a period of years the actual cost of all depreciable property. The yearly deductions of normal capital cost allowances are computed on the diminishing balance principle. (Taxpayers engaged in farming and fishing may choose between this and the straight-line method.) Published regulations establish a number of classes of property and maximum rates. There is provision for recapture of any amount allowed in excess of the ultimate net capital cost of any asset.

Expenditures on scientific research related to the business of the taxpayer may be written off for tax purposes in the year when incurred.

Taxpayers operating mines, oil wells, gas wells and wells for extracting potash by the solution method are allowed a depletion allowance, usually computed as a percentage of profits derived from mineral, oil or gas production, which continues as long as the mine or well is in operation. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer and the deduction of exploration and drilling expenses. Taxpayers operating timber limits receive an annual allowance, sometimes called a depletion allowance. This is a rateable proportion of the amount invested in the limit and is based on the amount of timber cut in the year. When the amount invested in the limit has been recovered, no further allowance is given.

In computing taxable income, corporations may deduct dividends received from other Canadian taxpaying corporations and also from foreign corporations in which the Canadian corporation has at least 25 p.c. stock ownership. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 10 p.c. of their income.

The general rates of tax on corporate taxable income are 18 p.c. on the first \$35,000 of taxable income and 47 p.c. on taxable income in excess of \$35,000. Corporations deriving more than one half of their gross revenue from the sale of electric energy, gas or steam pay tax on their taxable income from such sources at the rate of 18 p.c. on the first \$35,000 of taxable income and 45 p.c. on taxable income in excess of \$35,000.* Corporations that qualify as investment companies pay a tax of 18 p.c. on their taxable income. In addition to these rates, all corporations pay an old age security tax of 3 p.c. of taxable income, bringing their rates up to 21 p.c. and 50 p.c. (21 p.c. and 48 p.c. for the public utility companies and 21 p.c. for investment companies).

On profits earned in 1968 and 1969 corporations must also pay a surtax of 3 p.c. of the amount of federal tax excluding old age security tax but before the abatement under federal-provincial fiscal arrangements referred to below. Starting in 1969, life insurance corporations have to pay a special 15-p.c. tax on a base related to their investment income. This is in addition to the normal corporation income tax.

In calculating the amount of their income tax, corporations are allowed a deduction from tax under three headings. (1) *Foreign Tax Credit*—foreign taxes paid on income from foreign sources may be deducted from Canadian income tax but the deduction may not exceed the proportion of Canadian tax relative to such income. (2) *Abatement under Federal-Provincial Fiscal Arrangements*—corporations may deduct from their federal tax otherwise payable a tax abatement equal to a fixed percentage of their taxable income

* 95 p.c. of the federal tax collected from these corporations is remitted to the provinces.

attributable to operations in a Canadian province. This abatement is to make room for the provincial income tax levied by each Canadian province. The amount of the abatement is 10 p.c. of taxable income attributable to operations in each province. (3) *Provincial Logging Tax*—corporations may deduct from their federal tax otherwise payable an amount equal to two thirds of a provincial tax on income from logging operations not exceeding two thirds of 10 p.c. of the corporation's income from logging operations in the province. (At present only Ontario, Quebec and British Columbia impose logging taxes—see p. 1051.)

Income from the operation of a new mine, including income from wells for extracting potash by the solution method, is exempt from income tax during the first 36 months after coming into commercial production.

Corporations are required to pay their tax (combined income, surtax and old age security tax) in monthly instalments. At present, corporations start payments for a taxation year in the third month of that taxation year but for taxation years starting after Nov. 30, 1969, corporations will have to begin their monthly tax payments in the first month of their taxation year and make their twelfth instalment by the last day of that year. Each monthly remittance will be equal to one twelfth of the estimated tax for the year (based on either the taxable income of the previous year or the estimated taxable income of the year in progress). As at present, any balance of tax outstanding will have to be paid by the last day of the third month following the close of the taxation year and the return for the year will have to be filed by the last day of the sixth month following the close of the taxation year.

Taxation of Non-residents

A non-resident is liable for payment of income tax if he was employed or was carrying on business in Canada during a taxation year. The expression "carrying on business in Canada" includes (1) maintaining a permanent establishment in Canada, (2) processing goods even partially in Canada, and (3) entering into contracts in Canada. The taxable income of a non-resident thus derived is taxed under the same schedule of rates as a Canadian resident (personal or corporation income tax rates as the case may be). (Tax treaties with some countries provide certain exemptions from tax for remuneration for services performed in Canada by residents or employees of these countries. They also prohibit Canada taxing profits of a non-resident enterprise unless that enterprise has a permanent establishment in Canada.)

Profits earned in Canada by a non-resident corporation carrying on business through a branch or permanent establishment in Canada are taxed at the regular rates of corporation income tax and are also subject to an additional tax of 15 p.c. This additional tax is imposed on profits attributable to the branch after deducting therefrom Canadian federal and provincial income taxes and an allowance in respect of the net increase in capital investment in property in Canada.

Furthermore, the Income Tax Act imposes a tax at the rate of 15 p.c. on certain forms of income going from Canada to non-resident persons. It applies to interest (other than interest on government bonds issued after Apr. 15, 1966, interest on certain bonds issued before Dec. 20, 1960 and interest paid to certain exempt lenders), dividends, rentals, royalties, income from a trust or estate and alimony, and applies whether the income goes to non-resident individuals or to corporations. The rate is reduced to 10 p.c. in the case of dividends paid by a company that has a degree of Canadian ownership* and is also 10 p.c. on royalties from motion picture films. This non-resident tax is withheld at the source by the Canadian payer. Non-residents who receive only this kind of income from Canada do not file returns in Canada.

* Generally, a corporation is regarded as having a degree of Canadian ownership where 25 p.c. of its equity and voting shares are owned by Canadians and/or corporations controlled in Canada, or where the voting shares of the corporation are listed on a Canadian stock exchange and no more than 75 p.c. of its issued outstanding voting shares are owned by a non-resident alone or in combination with related persons.

Gift Tax

The Income Tax Act levies a tax upon gifts. The Budget presented on Oct. 22, 1968 announced an increase in the rates of gift tax and a change in the exemptions with respect to gifts made after that date. The rates now apply to a cumulative gift sum. A "cumulative gift sum" is the aggregate of the taxable value of all gifts made after Oct. 22, 1968, up to the end of the year for which tax is being calculated. The rates of tax range from 12 p.c. on a cumulative gift sum of \$15,000 or less to 75 p.c. where the cumulative gift sum exceeds \$200,000. Gifts from a husband to his wife or from a wife to her husband are exempt. In addition, gifts up to \$2,000 to any number of persons are exempt.

Estate Tax

The estate of a deceased person is subject to estate tax if its value exceeds \$50,000. The tax applies to property passing, or deemed to pass, at death. Property "deemed to pass" includes such property as gifts made by the deceased within three years of his death, pensions or death benefits payable in respect of his death, and annuities purchased by the deceased. All the property of persons who were domiciled in Canada before their death must be taken into consideration no matter where that property is situated; for persons dying domiciled outside of Canada only their property situated in Canada is subject to tax.

In computing the tax of a Canadian domiciliary, the value of the whole estate is first determined. Then the estate debts and certain expenses, such as funeral expenses, are deducted. The remainder is "aggregate net value".

If the aggregate net value of an estate is \$50,000 or less, no tax is exacted. This figure of \$50,000 is not a deductible exemption, but simply an amount at and below which no tax is levied. If an estate is valued at more than \$50,000, it may or may not be taxable depending on the amount of the deductible exemptions, but in no case must the tax reduce the value of the estate, after tax, to less than \$50,000.

Where the aggregate net value of an estate is more than \$50,000 there may be deducted certain amounts in respect of bequests left by the deceased to his or her surviving spouse or children, or to charitable organizations in Canada. There is a complete exemption of the value of property left by the deceased in the form of an outright bequest to his surviving spouse or in the form of a settlement under which only the surviving spouse is entitled, during her (or his) lifetime, to receive all of the income of the settlement, or to receive periodic annual payments out of the income or capital, and under which only the surviving spouse may, during her (or his) lifetime, use or receive the capital. In the case where the surviving spouse is to receive periodic payments, the exemption cannot exceed the value of a capital sum that is determined by regulation to be sufficient to yield the amount of the periodic payment. The exemption is granted only if it is established that the surviving spouse has an indefeasible right to the bequest.

There are also exemptions for bequests to children of the deceased. A bequest to a child over age 25 (if he is not infirm) is exempt to a maximum of \$10,000. A bequest to a child aged 25 or under is exempt to the extent of a maximum of \$10,000, plus \$1,000 for each full year remaining until he is 26. If the average income of the child for the previous three years is in excess of \$5,000, the additional exemption is reduced by the excess. A bequest to an infirm, wholly dependent child is exempt to the extent of a maximum of \$10,000, plus \$1,000 for each full year remaining until he is aged 71. In all these cases the exemption cannot exceed the value of the bequest. An indefeasible bequest to a charitable organization in Canada is also completely exempt.

After these deductions from aggregate net value are made, the amount left is the "aggregate taxable value" to which the tax rates are applied. The first bracket of the rate schedule—from \$0 to \$20,000 of aggregate taxable value—has a zero rate, which in effect constitutes a basic exemption of \$20,000. The next \$20,000 of aggregate taxable value has a rate of 15 p.c. and so on up to the maximum rate of 50 p.c. on the aggregate taxable value in excess of \$300,000. Gifts made by the deceased during his lifetime that

were not included in the value of his estate but were in excess of the gift tax exemptions are added to the aggregate taxable value to the extent of the excess, as is the amount of gift tax that would be payable on this excess using rates in force at the time of his death. This is only for purposes of setting the rates of estate tax and an allowance is made in recognition of the gift tax paid on them.

From the tax so calculated may be deducted in the following order (1) a tax abatement in respect of property situated in a province that levies a succession duty, or in respect of foreign personal property transmitted in such a province, (2) a credit for gift tax paid on gifts made by the deceased in cases where the value of the property comprised in the gift has been included in computing the aggregate net value (e.g., where the gift has been made within three years of the death of the donor), (3) a credit for foreign death taxes, and (4) the "notch" credit. The "notch" credit has the effect of preventing the tax otherwise payable on an estate whose aggregate net value is immediately in excess of \$50,000 from reducing the value after tax to less than \$50,000; it also reduces the tax otherwise payable on an estate whose value falls in this "notch" area so that the tax actually payable will not exceed 50 p.c. of the difference between the aggregate net value and \$50,000. The abatement referred to above is in recognition of provincial succession duties. It is a deduction of 75 p.c. from the federal estate tax otherwise payable (see p. 1052).

Where an exemption from gift tax or estate tax in respect of a gift or bequest from a person to his spouse in the form of a trust or other settlement has been allowed, the property in the settlement at the time of the death of the spouse second to die is deemed to be property passing on her (or his) death. Where the estate tax on such property would have been abated in recognition of provincial succession duties at the time of the death of the spouse first to die, but was not, because the property was exempt, an appropriate abatement is given at the time of the second death.

In general, the provisions described above apply in respect of property passing on the death of a person who dies on or after Oct. 23, 1968. (For the provisions of the estate tax applicable in respect of property passing on the death of a person who died before Oct. 23, 1968, see the 1968 Canada Year Book, pp. 1015-1016.)

The property situated in Canada of a deceased person not domiciled in Canada is subject to estate tax at a flat rate of 15 p.c. No deduction is allowed against the assessed value of such property except for debts specifically chargeable to it. However, there is a special provision that exempts all such property of less than \$5,000 value and also provides that the tax must not reduce the value of the property after tax to less than \$5,000. (The Estate Tax Convention between Canada and the United States increases this figure to \$15,000.) Where property is subject to provincial succession duty, the 15-p.c. tax is abated by 50 p.c. in the case of property subject to Ontario or Quebec duty and by 75 p.c. with respect to property subject to British Columbia duty.

Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. Both the sales tax and the special excise taxes are levied on goods imported into Canada and on goods produced in Canada. They are not levied on goods exported. The sales tax, which is at the rate of 9 p.c., is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. For alcoholic beverages and tobacco products, the sale price for purposes of the sales tax includes excise duties levied under the Excise Act (see p. 1047). An old age security tax of 3 p.c. is levied on the same basis as the 9-p.c. tax, bringing the total sales tax to 12 p.c. (The total sales tax on most building materials is 11 p.c.)

Many classes of goods are exempt from sales tax. Foodstuffs, drugs, electricity and fuels for lighting or heating are generally exempt as are articles and materials used by public hospitals and certain welfare institutions. The products of farms, forests, mines and fisheries are, to a large extent, exempt as well as most equipment used in farming and fishing.

Production machinery and equipment and materials consumed or expended in production are not taxed. Also, a variety of items are exempt from sales tax when purchased by municipalities. These and other exemptions are set forth in schedules to the Excise Tax Act.

A number of articles are subject to special excise taxes in addition to the sales tax. Where these are ad valorem taxes they are levied on the same price or duty-paid value as the general sales tax. Those levied at present are as follows:—

Cigarettes.....	3 cents per 5 cigs.
Cigars.....	17½ p.c. ad valorem
Jewellery, including clocks, watches, articles of ivory, amber, shell, precious or semi-precious stones, goldsmiths' and silversmiths' products except gold-plated or silver-plated ware for the preparation or serving of food or drink.....	10 p.c. ad valorem
Lighters.....	10 cents per lighter
Playing cards.....	20 cents per pack
Radios.....	the greater of \$2 per radio or 15 p.c. ad valorem
Phonographs and television sets.....	15 p.c. ad valorem
Tubes for radios, phonographs and television sets, not including television picture tubes, priced under \$5 per tube.....	10 cents per tube
Television set picture tubes.....	15 p.c. ad valorem
Slot machines—coin, disc or token-operated games or amusement devices	10 p.c. ad valorem
Matches.....	10 p.c. ad valorem
Tobacco—pipe tobacco, cut tobacco and snuff.....	90 cents per lb.
Tobacco pipes, cigar and cigarette holders and cigarette rolling devices...	10 p.c. ad valorem
Toilet articles, including cosmetics, perfumes, shaving creams, antiseptics, etc.....	10 p.c. ad valorem
Wines—	
Manufactured in Canada—*	
Wines of all kinds containing not more than 7 p.c. absolute alcohol by volume.....	25 cents per gal.
Non-sparkling wines containing more than 7 p.c. absolute alcohol by volume but not more than 40 p.c. proof spirit.....	50 cents per gal.
Sparkling wines.....	\$2.50 per gal.
Additional tax applying to all wines whether imported or produced in Canada—	
Wines of all kinds containing not more than 7 p.c. of absolute alcohol by volume.....	2½ cents per gal.
Wines of all kinds containing more than 7 p.c. of absolute alcohol by volume.....	5 cents per gal.
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies.....	10 p.c. of net premium for property, surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

All the foregoing items, except the last, are also subject to the general sales tax of 9 p.c. and the old age security tax of 3 p.c. Cigarettes, cigars and tobacco are subject to further taxes, referred to as excise duties (see below).

Excise Duties

The Excise Act levies taxes (referred to as excise duties) on alcohol, alcoholic beverages and tobacco products produced in Canada. These duties are not levied on imported goods but the customs tariff on these products includes a levy to correspond with the duties levied on domestic production. These duties are not levied on goods exported.

* The customs tariff on wines includes a levy to correspond to these taxes on domestic production.

Spirits.—The duties are on a per-gallon basis in proportion to the strength of proof of the spirits. These duties do not apply to denatured alcohol intended for use in the arts and in industry, or for fuel, light or power, or for any mechanical purpose. The various duties are as follows:—

On every gallon of the strength of proof distilled in Canada.....	\$14.25
On every gallon of the strength of proof used in the manufacture of—	
Medicines, extracts, pharmaceutical preparations, etc.....	\$1.50 per gal.
Approved chemical compositions.....	15 cents per gal.
Spirits sold to a druggist and used in the preparation of prescriptions.	\$1.50 per gal.
Imported spirits when taken into a bonded manufactory in addition to other duties.....	30 cents per gal.

Canadian Brandy.—Canadian brandy, a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials, is subject to a duty of \$12.25 per gallon.

Beer.—All beer or other malt liquor is subject to a duty of 42 cents per gallon.

Tobacco, Cigars and Cigarettes.—The excise duties make up nearly as large a part of the total tax on tobacco products as the special excise taxes already described. The rates are as follows:—

On manufactured tobacco of all descriptions, except cigarettes.....	35 cents per lb.
Cigarettes weighing not more than 3 lb. per thousand (nearly all of the cigarettes used in Canada are of this type).....	\$4.00 per thousand
Cigarettes weighing more than 3 lb. per thousand.....	\$5.00 per thousand
Cigars.....	\$2.00 per thousand
Canadian raw leaf tobacco when sold for consumption.....	10 cents per lb.

Combined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act gives the following total taxes:—

Cigarettes.....	\$10.00 per thousand (20 cents per pack of 20 cigarettes) plus the 12-p.c. sales tax on the manufacturer's sale price
Manufactured tobacco.....	\$1.25 per lb. plus the 12-p.c. sales tax on the manufacturer's sale price
Cigars.....	\$2.00 per thousand plus the 17½-p.c. special excise tax and the 12-p.c. sales tax on the manufacturer's sale price.

Customs Duties*

Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties, which once were the chief source of revenue for the country, have declined in importance as a source of revenue to the point where they now provide less than 10 p.c. of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly to Canada from countries within the Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled

* See also p. 1022.

to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to either the Preferential or Most-Favoured-Nation treatment. Few countries are in this category and, in terms of trade coverage, are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates that apply on any particular item may be obtained from the Department of National Revenue, which is responsible for administering the Customs Tariff.

Subsection 2.—Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the revenue necessary for provincial purposes. All provinces levy a tax on the income of individuals and corporations resident within their boundaries or deriving income from activities or operations carried out therein. Only the Provinces of Ontario and Quebec impose special taxes on corporations in addition to income tax and only the Provinces of Ontario, Quebec and British Columbia impose a tax on property passing at death; the remaining provinces receive payment from the Federal Government of their 75-p.c. share of estate tax levies. Under the terms of the existing federal-provincial fiscal arrangements, the Federal Government makes "equalization payments" to some provinces in recognition of the fact that the potential tax yield in those provinces, measured on a per capita basis, is lower than the national per capita tax yield. For some provinces the equalization payments constitute a very important source of revenue.

Some of the more important provincial levies are reviewed briefly on this and following pages.

Individual Income Tax

All provinces levy a tax on the income of individuals who reside within their boundaries or who earn income therein. In nine of the ten provinces, these taxes are computed as a percentage of federal "basic tax". As previously explained, "basic tax" is federal income tax (excluding old age security tax and the social development tax) otherwise payable at full federal rates before the abatement under the federal-provincial fiscal arrangements and before allowance for the federal tax reduction passed in 1966. These provincial taxes are collected by the Federal Government on behalf of these provinces. In Quebec, provincial income tax is levied at graduated rates that progress from 5.5 p.c. on the first \$1,000 of taxable income to a maximum of 40.0 p.c. on the excess over \$400,000. In addition, a 6-p.c. surtax has been levied for the taxation years 1968 and 1969. The determination of taxable income for Quebec tax is based on exemptions and deductions which, with the exception of deductions for dependent children eligible for family allowances,* are similar to those for federal tax. Quebec taxpayers whose net income does not exceed \$4,000 if married or in a situation recognized as equivalent and \$2,000 in other cases are exempt from

* Quebec has a family allowance program which supplements the federal program; it provides for allowances that increase from \$30 per annum for a first child to a maximum of \$70 per annum for a sixth and for each additional child. The Quebec program is in lieu of exemptions for provincial income tax purposes for children eligible for family allowances.

payment of the tax. If the taxpayer's income exceeds such amounts, the tax to be paid will not reduce his income to less than \$4,000 or \$2,000 as the case may be. The Province of Quebec collects its own tax.

The percentages that provincial income tax liability is of federal "basic tax" for 1969 are: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia each 28 p.c., Quebec approximately 50 p.c., and Manitoba and Saskatchewan each 33 p.c.

Corporate Income Tax

All provinces levy a tax on the profits of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec the provincial tax imposed on taxable income in the province is determined on the same basis as for federal income tax. In Ontario and Quebec the determination of taxable profits for purposes of provincial tax follows closely the federal rules. Five of the ten provinces levy corporate income taxes at rates in excess of the 10-p.c. abatement allowed by the Federal Government. The rate that applies in Manitoba and Saskatchewan is 11 p.c., and in Newfoundland, Ontario and Quebec, 12 p.c. All provinces except Ontario and Quebec have signed agreements for the collection of the corporate income taxes by the Federal Government.

Taxes on Alcoholic Beverages and Tobacco

Generally speaking, the sale of spirits in all provinces is made through provincial agencies operating as boards or commissions which exercise monopolistic control over alcoholic beverages. The provincial mark-up over the manufacturer's price is the effective means of taxation. Beer and wine may be sold by retailers or government stores, depending on the province, but in all cases these sales contribute to provincial revenues.* The Province of Prince Edward Island imposes a tax of 10 p.c. on all beer, wine and spirits sold at retail, collected under authority of the Health Tax Act, and in Newfoundland a tax of 7 p.c. is imposed at retail level.

Newfoundland imposes a tax on tobacco sold at retail of one half of one cent per cigarette purchased; from two to 10 cents per cigar, depending on price; and two cents per half ounce or less of other tobacco. Prince Edward Island's tax on tobacco sold at retail, effective Mar. 20, 1968, is two fifths of one cent per cigarette purchased; from one to seven cents on cigars purchased at retail for from four cents to 45 cents; 25 p.c. of the retail price of each cigar purchased for more than 45 cents; and 20 p.c. of the retail price of all other tobacco purchased. Nova Scotia charges a 5-p.c. hospital tax on all alcoholic beverages. Saskatchewan's tax on retail tobacco sales is $\frac{5}{8}$ ths of one cent per cigarette purchased; from one to 10 cents per cigar, depending on price; and two cents on every half ounce of other tobacco; the average rate of the tobacco tax is 15 p.c. Specific sales taxes on tobacco products are also levied in New Brunswick, Quebec, Manitoba and Ontario.

Retail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. All provinces except Alberta levy this type of tax at rates varying from 5 p.c. to 8 p.c. These direct levies apply to tangible taxable commodities sold, with varying exemptions, for consumption in the province and to a few selected services, for example: to telephone services in all provinces; in Quebec and New Brunswick to telecommunications, meals and hotel and motel charges; in Prince Edward Island, since April 1968, to laundry and dry cleaning services, to accommodations, and to repair and installations labour; and in Manitoba to a broad range of services including dry cleaning, furniture repairs, motel accommodation, etc. The sales taxes do not apply to goods sold for delivery in other provinces or to exported commodities. All provinces imposing sales taxes provide comprehensive exemptions for foodstuffs and drugs.

* The provincial mark-up over the manufacturer's price is not considered a "tax" in DBS financial statistics but forms part of the "profits of government business enterprises".

Amusement Taxes

Each of the provinces with the exception of Alberta, Saskatchewan, British Columbia and Quebec has a tax on admission to places of entertainment. In addition, there is generally a licence fee imposed on the operator or owner of these amusement places. The tax on admissions is within the range of 5 p.c. to 15 p.c.

Gasoline and Diesel Fuel Oil Taxes

Each of the ten provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 13 cents per gallon in British Columbia to 21 cents in Prince Edward Island and 25 cents in Newfoundland. The amount of tax borne by one gallon of motor vehicle fuel in each province is as follows:—

	<i>Gasoline</i>	<i>Diesel Fuel</i>		<i>Gasoline</i>	<i>Diesel Fuel</i>
	cts.	cts.		cts.	cts.
Newfoundland.....	25	25	Ontario ²	18	24
Prince Edward Island ¹	21	21	Manitoba ³	17	20
Nova Scotia.....	19	27	Saskatchewan ⁴	17	20
New Brunswick.....	19	23	Alberta.....	15	17 ⁵
Quebec ²	19	25	British Columbia.....	13	15

¹ Gasoline and diesel fuel used by primary producers—farmers, fishermen, manufacturers and processors—is exempt from tax as is also gasoline and motor fuel used by owners or operators of registered pleasure craft and skis, and that used by consumers engaged in the construction of the Northumberland Strait Crossing.

² Some relief from taxation is given where gasoline or fuel oil is used for farming, manufacturing, commercial fishing and other off-highway purposes.

³ Exemptions are allowed on purple fuel used in operating agricultural machinery, farm trucks and municipal fire apparatus, and in trapping, fishing and prospecting.

⁴ Gasoline and diesel fuel used by farmers in farm trucks are exempt from tax.

⁵ Three cents less for domestic heating. Generally, fuel oil used for agricultural and industrial purposes is taxed at three cents per gallon.

The British Columbia net tax rate (after refund) on gasoline used in logging trucks off highway, in power units of motor vehicles for stationary industrial use, and in vehicles used by amputees, paraplegics and certain war disability pensioners is one cent per gallon. Gasoline coloured purple for certain off-highway use (including marine) and motor fuels, being any fuel except gasoline not consumed on provincial highways, is also taxed at one cent per gallon. Fuel oil used for heating purposes is taxed at one half cent per gallon.

Motor Vehicle Licences and Fees

Each province levies a fee on the annual registration of motor vehicles, which is compulsory. Upon registration a vehicle is issued with licence plates. The rates of fee vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the year of manufacture, the number of cylinders of the engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based on the gross weight for which the vehicle is registered, i.e., the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to register periodically and pay a fee for a new driver's licence. The licences are valid for periods of from one to five years and the fees vary from \$1 to \$7 a year.

Taxes on Mining Operations

All provinces except Prince Edward Island levy taxes of various kinds on mining operations. All provinces except Prince Edward Island and Alberta impose a tax on the income of firms engaged in mining operations in general or in specific kinds of mining operations. The Provinces of British Columbia, Alberta, Saskatchewan and Manitoba impose a tax on the assessed value of minerals or a flat rate per acre of mining property.

Ontario imposes a tax on the profit on the assessed value of minerals and a flat rate per acre of mining property. Manitoba imposes rates of from 6 p.c. to 11 p.c. on mining royalties. The British Columbia mining tax rate is 15 p.c. on net income from mining in excess of \$10,000.

Tax on Logging Operations

The Provinces of Quebec, Ontario and British Columbia levy a tax on the income from logging operations of individuals, partnerships, associations or corporations engaged in this activity. In Quebec and Ontario the rate is 10 p.c. and in British Columbia 15 p.c. on net income where in excess of \$10,000 (in Quebec and British Columbia if the net income is greater than \$10,000 the whole amount is taxable with no basic exemption). In Ontario and Quebec one third and in British Columbia 20 p.c. of the tax is allowed as a deduction from provincial corporate income tax or, in Quebec, from the provincial income tax; two thirds of the provincial tax is deductible from federal income tax.

Business Taxes

The Province of Quebec imposes a tax of one fifth of 1 p.c. on paid-up capital of corporations and Ontario levies a similar tax at the rate of one twentieth of 1 p.c.

The Provinces of Quebec and Ontario have a place-of-business tax. In Quebec, the tax is generally \$50 but is reduced to \$25 when the paid-up capital is less than \$25,000; in the case of loan companies, the tax is \$100 when capital paid up is \$100,000 or more. In Ontario, the tax for each permanent establishment is the lesser of \$50 or one twentieth of 1 p.c. of the paid-up capital of the corporation involved, but the total of the capital tax and the place-of-business tax cannot be less than \$20. Ontario also imposes an office tax of \$50 on every corporation that does not maintain a permanent establishment in the province but merely maintains a buying office, or merely holds certain provincial licences, or merely holds assets. A corporation that does not maintain a permanent establishment in Ontario but is represented by a resident employee or agent who is not deemed to operate a permanent establishment of the corporation in the province must pay an office tax of \$50 or one tenth of 1 p.c. of the total amount of its gross Ontario sales or revenue if less than \$50,000, subject to a minimum office tax of \$5.

Both provinces levy special taxes on certain kinds of companies such as banks, railway companies, express companies, trust companies and sleeping-car, parlour-car and dining-car companies. In Ontario, these special taxes (except the tax payable by insurance corporations calculated on gross premiums) and the capital and place-of-business taxes are payable only to the extent that they exceed the corporate income tax otherwise payable.

The Province of Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to other incorporated companies, the latter being similar to filing fees in other provinces.

Land Transfer Taxes

The Provinces of Ontario, Manitoba and Alberta levy a tax based on the price at which ownership of land is transferred. In Ontario, one fifth of 1 p.c. is imposed on the purchase price up to \$25,000 and two fifths of 1 p.c. on anything in excess of that amount. In Manitoba the rate is 1 p.c. In Alberta, registration fees proportionate to the conveyancing services rendered are charged and in the case of transfers and mortgages the fees are assessed on the value of the land transferred as on the amount of the mortgage. In addition, there is an Assurance Fund fee charged on transfers and mortgages which guarantees titles in certain circumstances. British Columbia and Saskatchewan do not have a land transfer tax but have an equivalent in land title fees which are based on land values.

Tax on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities transferred; the rates in both provinces are:—

Shares sold, transferred or assigned valued at—

Under \$1.....	$\frac{1}{10}$ th of 1 p.c. of value
\$ 1 to \$ 5.....	$\frac{1}{2}$ cent per share
\$ 5 to \$ 25.....	1 cent per share
\$25 to \$ 50.....	2 cents per share
\$50 to \$ 75.....	3 cents per share
\$75 to \$150.....	4 cents per share
Over \$150.....	4 cents per share plus $\frac{1}{10}$ th of 1 p.c. of value in excess of \$150
Bonds and debentures.....	3 cents for every \$100 or fraction thereof of par value.

Tax on Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies relative to risks incurred in the province. Saskatchewan imposes a tax of 1 p.c. on the motor vehicle premium income of insurance companies to finance a comprehensive high school driver-training program.

Succession Duties

Only the Provinces of Ontario, Quebec and British Columbia levy succession duties. These duties are a tax upon the right to succeed to property and are assessed upon the interest or benefit passing at death to an heir or beneficiary. The three provinces impose succession duties on all property situated in the province belonging to the deceased and passing at his death whether the deceased was domiciled in the province or elsewhere. Personal property, wherever situated, of a person dying domiciled within the province is also liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are generally governed by the value of the estate, the relationship of the beneficiary to the deceased and the amount going to any one person. The rate of tax increases as the degree of relationship between the deceased and his successor becomes more remote.

Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta, while not imposing succession duties, each receives 75 p.c. of the Federal Government estate tax levied on property situated within its borders. The Alberta share of estate taxes is rebated in full where the deceased was a bona fide resident of the province.

Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes at varying rates according to class for provincial revenue. Improved forest and tree-farm lands are taxed at 1 p.c. of assessed value; farm land at one half of 1 p.c.; wild land at 3 p.c.; coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at $1\frac{1}{2}$ p.c. In unorganized (non-municipal) areas, Ontario levies a property tax of $1\frac{1}{2}$ p.c. of assessed value; the minimum annual tax in respect of any land is \$6. New Brunswick levies a tax of \$1.50 per \$100 market value assessment on all land and buildings in the province and a

similar tax on business occupancy, to finance education, health, welfare and justice services. Nova Scotia also imposes property taxes of limited application.

Race Track Taxes

Ontario levies a tax on operators of race meets and on holders of winning tickets issued under the pari-mutuel system. Holders of winning tickets must pay a tax equal to 7 p.c. of the amount that would be payable to them if no percentage were deducted by the person holding the race meet. A number of other provinces levy a pari-mutuel tax on money bet in the province on horse races; in Newfoundland the rate is 11 p.c., in Prince Edward Island 10½ p.c., in Nova Scotia 11 p.c. on the first \$400,000 wagered and a reduced percentage on any additional money wagered (some of this money is refundable to the individual race tracks), in New Brunswick 5½ p.c., in Manitoba 10 p.c., in Alberta 5 p.c., in Saskatchewan 10 p.c., and in Quebec 7 p.c. on ordinary pools and 9 p.c. on special pools (quinella and daily-double). In British Columbia the tax is 12 p.c. but the province returns 2½ p.c. of money bet to horsemen and track operators for purses, etc.

Miscellaneous Provincial Taxes

In Newfoundland a tax of 7 p.c. is levied on premiums paid for all types of insurance except life, accident and sickness, and marine; and a telegraph tax is levied on companies operating cables or wireless stations between Newfoundland and points outside the province at the yearly rate of \$4,000 a cable or station.

In Prince Edward Island a fire marshal's tax is levied at the rate of ¾ of 1 p.c. on premiums paid for fire insurance. In Nova Scotia a fire marshal's tax is levied at the rate of one half of 1 p.c. on premiums paid for fire insurance in the province. A tax is also levied on long-distance telephone calls at the rate of five cents on the first 50 cents with a five-cent minimum and five cents on each additional 50 cents, applying only to calls made within the province.

Subsection 3.—Municipal Taxes

The municipalities in Canada levy taxes on the owners of property situated within their jurisdiction according to the assessed value of such property. Methods of determining assessed value vary widely but for taxation purposes it is generally considered to be a percentage of the actual value or, as in Nova Scotia and New Brunswick, of the actual market value. The revenues from such taxes are used generally to pay for street maintenance, schools, police and fire protection, snow removal in certain communities and other community services; in New Brunswick the municipal levy is used only for property service. Special levies are sometimes made on the basis of street frontage to pay for local improvements to the property such as sidewalks, roads and sewers. Not only is there a widespread difference in the bases used for property tax but there is also a wide variety of rates applied, depending on the municipality.

In addition to the taxes described above, municipalities usually impose a charge for the water consumption of each property holder or a water tax based upon the rental value of the property occupied. In New Brunswick, utilities (water, domestic sewerage and treatment, and electric power) must be financed on a user-charge basis; a part of the water budget may be transferred to the general budget on a hydrant-rental basis or a percentage of the budget, depending on the size of the municipal population. There are no municipal income taxes although certain localities have retained the use of a poll tax. In Newfoundland, Quebec and Saskatchewan, municipalities are empowered to levy an amusement

tax on the admission of persons to places of entertainment, although the amusement tax is generally a provincial preserve (see p. 1050). Electricity and gas are taxed at the consumer level in some western municipalities and in some New Brunswick municipalities, and coal and fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Telephone subscribers are subject to a special levy in Montreal and certain Ontario municipalities impose a tax on the gross receipts of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a business. In general, business tax rates are lower than those applying to property. In New Brunswick, business assessment is equal to the value of the real property occupied for business purposes. Three bases of assessment are in use—a fraction of the property assessment, the annual rental value of the premises, or the area of the premises. Certain municipalities may charge a licence fee instead of a business tax but others charge both a licence fee and a business tax.

Subsection 4.—Miscellaneous Levies

These are not generally referred to as taxes but they are similar to taxes in many ways.

Unemployment Insurance

A national program of unemployment insurance operates in Canada. Essentially, it provides relief to those qualified persons who temporarily find themselves without work. It is administered by a federal commission appointed for this purpose and financed by equal contributions from employers and employees plus a contribution from the Federal Government. The amount paid into the fund by employee and employer is directly proportional to the weekly wages of the employee. The rates of contributions, together with statistics on the operation of the program, are given at pp. 789-793.

Workmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered by workmen as a result of industrial accidents. In general, these provincial statutes establish an accident fund administered by a Board to which employers are required to contribute at a rate proportional with the hazards of the industry. See also pp. 794-795.

Hospital Insurance

A federal-provincial hospital insurance plan has been adopted by each of the ten Canadian provinces. Under this arrangement, the Federal Government pays approximately one half of the cost of hospitalization for patients who are participants under the plan. The provinces meet the remainder of the cost. Provincial revenues for this purpose are raised by various means. The Province of Quebec has increased its personal and corporation income tax. Certain provinces require the deduction of a monthly premium from the wages of their residents as a contribution or premium for the plan. In such provinces non-salaried people must also pay the premium directly if they wish to be covered by the plan. In some other provinces the proceeds of a retail sales tax are earmarked in whole or in part for the support of the hospital plan. See also pp. 272-274.

Canada and Quebec Pension Plans

In 1966 the Canada Pension Plan, a compulsory government-operated pension program, was introduced whereby each contributor builds up a right to a graduated pension, the amount of which is related to his earnings up to a certain level. This graduated benefit will supplement the universal old age security pension which is paid out of tax revenues.

It operates throughout the country except in the Province of Quebec where a similar pension plan is operated by the government of the province. Both plans have disability and survivor benefits. They are described at pp. 303-306.

Section 3.—Federal Government Finance

Subsection 1 of this Section contains financial statistics of the Federal Government prepared as far as possible in accordance with the classifications, concepts and definitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the *Canada Gazette*. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The *Canada Gazette* presentation is included because there is interest in and use for information on this basis.

Subsection 1.—DBS Statistics of Federal Government Finance

Revenue and Expenditure.—Table 3 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1966 and 1967.

3.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1966 and 1967

Source	1966	1967	Source	1966	1967
	\$'000	\$'000		\$'000	\$'000
Taxes—			Privileges, Licences and Permits—		
Income—			Natural resources.....	12,115	6,732
Corporation ¹	1,758,870	1,742,725	Other.....	26,507	32,287
Individual ¹	2,637,356	3,050,420	Sales and services other than institutional.....	108,215	113,520
On certain payments and credits to non-residents....	170,019	203,621	Fines and penalties.....	2,741	3,483
General sales ¹	1,917,215	2,073,081	Exchange fund profits.....	62,833	60,638
Excise Duties and Special Excise Taxes—			Own enterprises.....	156,541	163,670
Alcoholic beverages.....	264,097	270,302	Bullion and coinage.....	16,655	6,861
Tobacco.....	424,236	446,833	Postal service.....	276,050	295,529
Other.....	52,076	57,443	Other revenue.....	14,993	19,400
Customs import duties.....	685,519	777,586			
Estate taxes.....	108,353	101,106			
Other.....	161	170			
Totals, Taxes.....	8,017,902	8,723,287	Totals, Net General Revenue.....	8,694,552	9,425,407

¹ Includes old age security taxes.

Table 4 gives details of the amounts paid by the Federal Government to provincial governments, territories and municipal corporations for the year ended Mar. 31, 1967, and Table 5 gives details of expenditure by function for the years ended Mar. 31, 1966 and 1967.

4.—Payments by the Federal Government to Provincial Governments, Territories and Municipal Corporations, Year Ended Mar. 31, 1967

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Provinces	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Provincial Governments and Territories														
Federal-provincial fiscal arrangements ²	40,606	10,942	54,318	48,159	163,721	19,743	36,754	36,689	4,640	4,635	420,267	3,052	3,301	496,650
Share of income tax on power utilities.....	312	64	616	32	506	1,081	80	12	2,932	248	5,052	—	—	5,952
Statutory subsidies.....	9,650	637	2,132	1,745	3,964	4,624	2,117	2,124	2,887	1,673	31,379	—	—	31,379
Compensation due to withdrawal from joint programs.....	—	—	—	—	57,635	—	—	—	—	—	57,635	—	—	57,635
Totals, Above Items.....	50,664	11,663	57,065	49,936	225,916	25,418	38,960	38,825	10,459	6,556	515,463	3,052	3,301	521,816
Grants-in-Aid and Shared-Cost Contributions—														
Transportation—														
Trans-Canada Highway.....	5,775	432	18,304	10,599	41,780	2,930	—	423	339	433	81,015	—	—	81,015
Roads leading to resources.....	750	530	50	750	563	599	120	564	87	515	4,528	—	—	4,528
Other transportation.....	6,180	1,167	3,327	1,719	2,312	2,279	338	—	813	928	19,063	7	—	19,070
Health—														
Hospital insurance and diagnostic services.....	13,070	2,732	20,514	16,678	4,030	194,603	26,394	28,403	41,942	47,821	396,277	345	768	397,390
Hospital construction.....	879	1,108	354	373	3,451	6,962	638	1,034	1,513	979	16,381	—	93	16,474
General Health Grants—														
General public health.....	446	260	2,047	895	676	4,808	881	787	1,234	4,003	16,037	—	89	16,126
Tuberculosis control.....	136	19	79	68	—	875	90	82	119	158	1,626	16	—	1,642
Mental health.....	156	115	367	309	—	2,779	457	362	653	794	5,992	38	—	6,030
Professional training.....	117	20	169	62	—	613	79	87	166	135	1,448	—	—	1,448
Cancer control.....	3	16	32	68	—	583	99	145	176	176	1,122	—	—	1,122
Public health research.....	52	21	226	32	873	1,524	711	201	142	454	4,236	—	7	4,243
Medical rehabilitation and crippled children.....	131	10	94	98	—	939	147	139	62	264	1,884	—	—	1,884
Child and maternal health.....	56	8	63	75	34	264	80	79	144	58	1,861	—	—	1,861
Other health.....	—	—	1,829	3	—	4	—	39	577	—	2,452	—	—	2,452
Social Welfare—														
Old age assistance.....	1,676	390	1,667	1,620	—54	7,239	1,612	1,131	2,002	2,252	19,625	9	62	19,696
Blind persons' allowances.....	232	40	466	408	—	1,082	226	204	284	337	3,345	4	28	3,377
Disabled persons' allowances.....	833	369	1,854	1,042	—1	8,377	688	100	859	1,072	15,013	1	11	15,025
Unemployment assistance.....	9,948	605	3,371	2,023	33,287	42,923	7,995	7,507	13,587	22,200	143,116	84	71	143,271
Other social welfare.....	696	436	950	487	19,563	15,405	1,354	5,383	2,965	3,577	50,836	19	141	50,996
Recreation—														
Campground and picnic area developments.....	—	—	—	—	—	—	—	—	—	—	—	15	—	15
Fitness and amateur sport.....	61	36	51	68	—	129	103	61	44	88	641	36	36	709
Other recreation.....	2,117	2	184	168	2,831	4,164	1,768	1,418	2,908	1,016	16,576	245	31	16,852

Technical and vocational training—

Capital assistance to trade schools, etc.

192	18	2,338	768	50,083	44,200	5,288	4,153	16,649	12,180	135,959	97	136,056
1	35	110	110	—	685	136	139	1,179	109	1,000	26	1,026
72	—	27	155	251	3,033	190	351	1,079	873	6,051	—	6,056
1,453	59	1,557	1,886	2,376	4,130	369	804	3,947	2,035	18,016	99	18,731
21	54	158	158	—	545	31	60	188	95	1,174	—	1,174
8	—	—	15	—	100	6	30	10	30	139	—	139
2,338	66	3,057	693	5,882	31,403	4,854	2,647	1,980	1,026	54,036	104	54,232
23	1	71	16	64	304	217	44	15	64	819	—	819
11	2	93	62	1,390	888	167	84	397	55	3,149	4	3,153
—	1	2	—	—	390	2	—	—	18	418	—	418
—	43	—	—	16,184	6	—	—	—	—	16,233	—	16,233
302	15	1,560	60	213	—	—	—	—	—	2,150	—	2,150
264	40	197	896	1,907	1,650	508	367	999	1,923	8,751	—	8,751
482	440	1,104	836	12,200	4,239	1,646	2,659	1,432	2,759	27,806	—	27,806
779	27	80	168	73	1,743	250	200	494	31	1,158	—	1,158
87	29	208	147	1,636	1,634	15,974	—	—	533	5,333	12	5,345
—	—	8	101	—	—	—	—	—	187	17,994	7	18,147
40,407	8,187	66,243	43,706	201,613	394,301	72,725	59,732	98,318	109,268	1,103,500	1,243	1,106,255
100,071	19,850	123,309	93,642	427,529	419,719	111,685	98,557	108,777	115,824	1,618,963	4,294	1,623,081
230	155	2,020	975	7,584	18,439	2,065	1,168	2,251	3,034	38,821	41	38,902
—	—	—	1,730 ⁴	—	—	—	—	—	—	1,750	—	1,750
10	—	34	22	739	3,307	230	381	973	494	6,190	—	6,190
235	3	100	120	1,596	4,291	602	342	287	423	7,890	—	7,890
—	—	—	382	948	4,467	948	1,168	402	856	4,361	—	4,361
7	—	362	225	938	3,943	1,138	4	15	1,311	7,943	—	7,943
2,359	353	2,789	2,604	11,225	10,198	3,334	2,040	3,611	3,628	42,251	—	42,251
2,841	511	6,205	5,794	22,464	40,645	8,367	5,103	7,539	9,746	109,215	41	109,427
102,912	29,361	129,514	99,436	449,993	469,364	129,052	103,660	116,316	125,570	1,728,178	4,335	1,737,508

¹ Federal tax abatement grant.² Includes Atlantic Provinces adjustment grants \$10,500,000 each to Newfoundland, Nova Scotia and New Brunswick, and \$3,500,000 to Prince Edward Island.³ Includes additional subsidy of \$8,000,000.⁴ Financial assistance to the Town of Ormoco.

5.—Details of Cost of Federal Services Provided, Years Ended Mar. 31, 1966 and 1967

Function	1966 \$'000	1967 \$'000
General Government Services.....	339,535	428,471
Executive and administrative.....	292,023	376,473
Legislative.....	29,348	19,831
Research, planning and statistics.....	18,164	32,137
Other.....	—	30
Protection of Persons and Property.....	163,067	188,960
Law enforcement.....	12,467	13,375
Corrections.....	55,811	57,750
Police protection.....	81,448	101,275
Other.....	13,341	16,560
Transportation and Communications.....	598,407	668,701
Air.....	77,619	96,571
Road.....	133,008	149,752
Rail.....	122,063	139,711
Water.....	217,616	233,655
Telecommunications.....	43,499	43,461
Other.....	4,602	5,551
Health.....	481,185	510,157
Hospital care.....	410,989	430,535
General health.....	8,046	9,322
Public health.....	44,388	45,000
Medical, dental and allied services.....	17,762	25,300
Social Welfare.....	1,891,283	2,095,917
Old Age Security Fund pensions.....	927,299	1,073,006
Old age assistance.....	28,431	19,696
Aid to the blind.....	3,632	3,446
Aid to the disabled.....	14,979	16,050
Aid to the unemployed and unemployable.....	203,396	252,799
National employment service.....	26,335	38,038
Family allowances.....	555,686	563,807
Labour.....	5,806	10,084
Winter work projects.....	57,503	53,088
Other.....	68,216	65,903
Recreational and Cultural Services.....	57,733	86,625
Archives, art galleries, museums, libraries.....	18,290	19,368
Parks.....	20,367	21,933
Other.....	19,076	45,324
Education.....	296,445	431,058
Indian and Eskimo schools.....	52,575	64,120
Universities, colleges and other schools.....	190,302	310,461
Other.....	53,568	56,477
Natural Resources and Primary Industries.....	443,940	543,717
Fish and game.....	37,261	45,344
Forests.....	22,905	26,564
Land: settlement and agriculture.....	266,417	304,714
Minerals and mines.....	62,523	81,914
Water resources.....	29,403	36,380
Other.....	25,431	48,801
Trade and Industrial Development.....	88,670	164,657
National Capital Region Planning and Development.....	29,699	37,296
Defence Services and Mutual Aid.....	1,571,539	1,663,992
Veterans' Pensions and Other Benefits.....	372,160	391,953
Debt Charges (excluding retirements).....	897,030	902,618
Commission on sale of securities and management charges.....	14,920	16,768
Amortization of discount on securities sold.....	16,820	15,084
Interest.....	863,468	868,200
Other.....	1,822	2,566
Own Enterprises.....	162,743	178,080
International Co-operation and Assistance.....	126,410	211,923

5.—Details of Cost of Federal Services Provided, Years Ended Mar. 31, 1966 and 1967—concluded

Function	1966	1967
	\$'000	\$'000
Other Expenditures	583,808	666,146
Citizenship and immigration.....	18,854	22,507
External affairs.....	32,297	39,445
Postal services.....	301,453	335,735
Royal Canadian Mint.....	3,194	3,218
Housing research and slum clearance.....	14,384	12,371
Emergency measures.....	9,604	11,166
Other.....	204,022	241,704
Unconditional Transfers	429,571	562,558
To Provincial Governments.....	389,969	521,816
Statutory subsidies.....	31,579	31,579
Federal-provincial fiscal arrangements.....	270,541	426,650
Compensation due to withdrawal from joint programs.....	81,463	67,635
Share of income tax on power utilities.....	6,387	5,953
To Municipal Governments.....	39,602	40,742
Grants in lieu of taxes.....	37,752	38,992
Special grants.....	1,850	1,750
Totals, Cost of Services Provided	8,533,225	9,732,839

¹ Conditional transfers are classified by function. See Table 4 for details of all transfers to provincial governments, territories and municipal corporations.

Debt.—In Table 6, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 7 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1964-67, together with place of payment.

6.—Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at Mar. 31, 1964-67

Nature of Debt	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000
Direct Debt				
Bonded debt.....	16,510,097	16,838,214	16,959,787	17,630,206
<i>Less sinking funds</i>	—	5,441	—	—
Net bonded debt.....	16,510,097	16,832,773	16,959,787	17,630,206
Short-term treasury bills ¹	2,230,000	2,140,000	2,150,000	2,310,000
Accounts and other payables.....	1,447,585	1,213,171	1,160,719	1,405,780
Annuity, insurance and pension accounts.....	5,132,423	5,676,796	6,393,089	7,916,507
Other liabilities.....	430,498	481,694	516,946	772,308
Totals, Direct Debt (less Sinking Funds)	25,750,603	26,344,434	27,180,541	30,034,501
Indirect Debt				
Guaranteed bonds or debentures.....	1,377,611	1,368,298	1,331,548	1,275,948
<i>Less sinking funds</i>	—	—	—	—
Net guaranteed bonds or debentures.....	1,377,611	1,368,298	1,331,548	1,275,948
Guaranteed bank loans.....	219,039	282,018	398,690	562,714
Guaranteed insured loans under National Housing Act, 1954.....	4,499,000	4,934,000	5,321,621	5,789,000
Guarantees under Export Credits Insurance Act.....	378,096	468,644	508,213	458,096
Other guarantees.....	14,491	15,863	17,341	18,693
Totals, Indirect Debt (less Sinking Funds)²	6,488,237	7,068,823	7,577,413	8,104,451
Totals, Direct and Indirect Debt (less Sinking Funds)	32,238,840	33,413,257	34,757,954	38,139,252
	\$	\$	\$	\$
Direct debt (less sinking funds) per capita.....	1,339	1,346	1,358	1,472
Indirect debt (less sinking funds) per capita.....	337	361	379	397

¹ Having a term of three or six months.

² Excludes deposits of chartered banks in Bank of Canada and notes issued by the Canadian Corporation for the 1967 World Exhibition.

7.—Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1964-67

Item	1964	1965	1966	1967
Bonded debt..... \$'000	16,510,097	16,838,214	16,959,787	17,630,206
Average interest rate..... p.c.	4.27	4.49	4.53	4.71
Average term of issue..... yrs.	13.09	13.29	13.53	13.69
Place of Payment—				
Canada..... \$'000	16,133,692	16,461,809	16,588,787	17,264,612
New York..... “	376,405	376,405	371,000	365,594

Subsection 2.—Public Accounts Statistics of Federal Government Finance

The figures of Tables 8 and 10, giving details of revenue and of assets and liabilities, respectively, of the Federal Government for the fiscal years ended Mar. 31, 1966-68, and the figures of Table 9, giving details of Federal Government expenditure for the years ended Mar. 31, 1967 and 1968, are taken from the *Canada Gazette*.

8.—Revenue of the Federal Government, Years Ended Mar. 31, 1966-68

Revenue	1966	1967	1968
	\$	\$	\$
Tax Revenue—			
Customs import duties (net).....	685,519,390	777,585,703	746,437,351
Excise duties.....	445,885,434	460,980,029	488,554,309
Income tax.....	3,919,095,260	4,270,666,470	4,740,635,053
Personal ¹	2,142,456,230 ²	2,473,820,311 ²	2,849,573,890 ²
Corporation ¹	1,606,620,322	1,598,224,756	1,670,589,109
On certain payments and credits to non-residents.....	170,018,708	203,621,403	220,472,054
Sales tax (net) ¹	1,395,128,921	1,513,565,998	1,601,092,631
Estate tax, including succession duties.....	108,352,377	101,105,631	102,192,358
Other taxes.....	296,338,710	315,750,970	337,350,741
Totals, Tax Revenue.....	6,850,320,092	7,439,654,801	8,016,262,443
Non-tax Revenue—			
Post Office (net).....	237,482,296	253,342,482	281,645,632
Return on investments.....	438,254,129	519,140,346	612,274,956
Rullion and coinage.....	11,217,545	5,430,009	10,672,046
Other.....	158,546,142	140,610,745	155,734,370
Totals, Non-tax Revenue.....	845,500,112	918,523,582	1,060,327,004
Grand Totals, Revenue.....	7,695,820,204	8,358,178,383	9,076,589,447

¹ Excludes tax credited to the Old Age Security Fund.

² Excludes tax credited to Canada Pension Plan.

9.—Expenditure of the Federal Government, Years Ended Mar. 31, 1966-68

NOTE.—In 1967-68 some Departments of the Federal Government were reorganized; where a transfer of duties took place during 1967-68 the amounts for 1966-67 have been adjusted for comparative purposes.

Item	1966	1967*	1968
	\$	\$	\$
Defence Expenditures	1,594,981,383	1,695,871,969	1,812,965,210
National Defence.....	1,548,446,784	1,640,377,558	1,753,482,388
Defence Production.....	22,636,820	32,868,230	36,578,376
Technological assistance to Canadian defence industry.....	23,897,779	22,626,181	22,904,446
Non-defence Expenditures	6,139,814,142	7,063,809,027	8,056,026,456
Agriculture.....	186,263,616	230,657,096	277,066,204
Atlantic Development Board.....	23,755,359	39,949,251	42,396,981
Atomic Energy Control Board.....	1,784,132	2,244,736	2,801,717
Atomic Energy of Canada Limited research program.....	52,666,043	57,983,346	66,500,000
Auditor General.....	1,741,901	2,058,677	2,268,666
Board of Broadcast Governors.....	382,787	601,814	1,033,551
Canadian Broadcasting Corporation.....	97,458,915	115,243,073	143,283,051
Central Mortgage and Housing Corporation.....	21,571,958	20,122,952	23,131,106
Chief Electoral Officer.....	12,953,140	919,041	755,357
Consumer and Corporate Affairs.....	4,591,027	5,529,033	7,594,713
Defence Production.....	8,860,613	9,314,485	9,502,482
Dominion Bureau of Statistics.....	15,591,823	26,635,421	22,474,762
Energy, Mines and Resources.....	107,357,514	130,188,364	136,457,717
External Affairs.....	152,545,955	230,474,187	215,748,898
Finance.....	1,681,066,198	1,836,031,255	2,148,118,660
Administration and general.....	4,791,352	18,101,808	16,510,601
Public debt charges.....	1,110,857,197	1,190,523,254	1,300,748,995
Fiscal, tax-sharing, subsidy and other payments to provinces.....	465,993,282	515,522,814	737,510,554
Other.....	89,424,367	111,833,379	94,343,610
Fisheries.....	34,526,476	41,471,351	51,740,982
Forestry and Rural Development.....	57,134,577	66,490,503	81,062,602
Governor General and Lieutenant-Governors.....	690,556	774,003	959,867
Indian Affairs and Northern Development.....	156,433,733	197,415,383	231,436,113
Industry.....	45,916,054	47,892,837	84,712,344
Insurance.....	1,512,059	1,652,187	1,904,185
Justice.....	11,224,377	12,175,037	15,354,385
Labour.....	23,993,711	24,911,054	10,879,841
Legislation.....	14,711,823	17,835,638	18,305,865
Manpower and Immigration.....	236,478,088	320,416,247	421,593,934
National Film Board.....	6,891,335	8,016,817	9,323,211
National Gallery of Canada.....	1,815,626	1,872,361	2,949,577
National Health and Welfare.....	1,175,122,029	1,315,942,452	1,488,295,125
Administration and general.....	2,505,929	7,753,780	37,831,694
Health services.....	372,717,431	451,086,072	523,211,385
Medical services.....	57,506,364	58,496,917	42,497,286
Food and drug services.....	5,360,491	6,769,175	8,191,239
Welfare services.....	767,031,814	811,836,508	876,563,521
National Research Council including Medical Research			
Council.....	74,387,029	94,648,779	121,748,623
National Revenue.....	94,971,980	105,868,118	115,058,155
Post Office.....	240,206,458	268,493,659	301,845,593
Privy Council.....	6,080,981	7,897,580	12,483,776
Public Archives and National Library.....	1,973,514	2,663,017	3,592,229
Public Printing and Stationery.....	3,053,651	4,020,598	4,874,166
Public Service Commission.....	7,986,854	10,848,505	13,390,368
Public Service Staff Relations Board.....		29,434	982,686
Public Works.....	275,147,218	294,372,635	308,599,166
Secretary of State.....	54,178,085	133,847,296	189,882,484
Solicitor General.....	138,834,027	144,275,859	153,459,858
Trade and Commerce.....	67,957,275	73,509,965	81,383,082
Transport.....	468,230,829	528,228,975	564,536,146
Treasury Board.....	104,389,925	153,358,110	158,573,075
Unemployment Insurance Commission.....	98,037,727	106,107,051	107,150,238
Veterans Affairs.....	369,337,164	390,820,545	400,814,912
Grand Totals, Expenditures	7,734,795,525	8,779,680,996	9,868,991,666

**10.—Statement of Assets and Liabilities of the Government of Canada, as at
Mar. 31, 1966-68**

Item	1966	1967	1968
	\$	\$	\$
Assets			
Current Assets—			
Cash.....	759,080,004	1,009,249,467	1,260,370,631
Departmental Working Capital Advances and Revolving Funds.....	120,576,475	157,794,702	188,540,216
Securities held for the securities investment account at amortized cost.....	81,475,697	197,689,061	44,354,537
Other current assets.....	54,861,735	29,232,480	39,121,941
Totals, Current Assets.....	1,015,993,911	1,393,965,710	1,530,387,325
Cash in blocked currency.....	1,002,400	2,136,260	2,136,260
Advances to the Exchange Fund Account.....	2,696,000,000	2,355,000,000	2,033,312,000
Sinking fund and other investments held for retirement of un- matured debt.....	—	3,151,500	8,140,398
Investment in special United States of America securities— Columbia River Treaty.....	187,191,661	180,029,353	122,616,661
Canada Pension Plan Investment Fund.....	34,853,000	615,521,000	1,280,788,000
Loans to and Investments in Crown Corporations.....	5,659,074,571	6,728,664,785	7,939,410,664
Loans to national governments.....	1,225,212,643	1,201,581,177	1,206,083,565
Other Loans and Investments—			
Subscriptions to Capital of, and working Capital Advances and Loans to, International Organizations.....	724,695,231	952,187,667	969,646,296
Loans to provincial governments.....	96,723,106	123,515,007	187,748,438
Veterans' Land Act advances (less reserve for conditional benefits).....	256,191,461	311,408,833	382,949,442
Miscellaneous.....	185,602,890	326,886,707	405,528,695
Totals, Other Loans and Investments.....	1,263,212,688	1,713,998,214	1,945,872,871
Securities held in trust.....	51,956,505	50,852,748	59,814,276
Deferred Charges—			
Unamortized portions of actuarial deficiencies—			
Canadian forces superannuation account.....	53,601,200	260,223,200	187,617,200
Public service superannuation account.....	93,620,600	189,453,200	150,319,800
Royal Canadian Mounted Police superannuation account.....	3,115,200	10,956,800	15,816,000
Unamortized loan flotation costs.....	106,217,789	121,212,572	138,201,554
Totals, Deferred Charges.....	256,554,789	581,845,772	491,954,554
Suspense accounts.....	—	—	—
Capital assets.....	1	1	1
Inactive loans and investments.....	94,824,381	94,824,381	94,824,381
Total Recorded Assets.....	12,485,876,550	14,921,570,901	16,715,340,956
Less: Reserve for losses on realization of assets.....	—546,384,065	—546,384,065	—546,384,065
Net recorded assets.....	11,939,492,485	14,375,186,836	16,168,956,891
Net debt.....	15,543,447,865	15,964,950,478	16,757,352,697
	27,482,940,350	30,340,137,314	32,926,309,588

**10.—Statement of Assets and Liabilities of the Government of Canada, as at
Mar. 31, 1966-68—concluded**

Item	1966	1967	1968
	\$	\$	\$
Liabilities			
Current and Demand Liabilities—			
Outstanding treasury cheques.....	332,859,574	382,624,889	427,400,654
Accounts payable.....	380,308,616	454,510,346	520,196,369
Non-interest-bearing notes payable on demand.....	255,388,518	366,378,362	816,729,712
Matured debt outstanding.....	27,324,686	30,670,121	25,969,247
Interest due and outstanding.....	110,930,898	111,271,485	161,569,528
Interest accrued.....	254,292,555	286,250,208	315,282,741
Other current liabilities.....	37,731,247	40,396,426	43,479,142
Totals, Current and Demand Liabilities.....	1,398,836,094	1,672,101,837	2,310,627,393
Deposit and trust accounts.....	310,728,861	372,258,741	474,719,063
Annuity, Insurance and Pension Accounts—			
Government annuities.....	1,317,080,018	1,324,518,806	1,326,098,138
Canada Pension Plan Account.....	89,405,854	680,880,663	1,352,754,341
Old Age Security Fund.....	216,982,842	429,592,180	536,089,248
Canadian forces superannuation account.....	2,184,209,822	2,577,016,944	2,723,268,313
Public service superannuation account.....	2,390,383,090	2,689,467,818	2,875,823,276
Miscellaneous.....	194,071,319	214,445,306	238,934,738
Totals, Annuity, Insurance and Pension Accounts.....	6,392,132,945	7,915,921,717	9,052,968,054
Undisbursed Balances of Appropriations to Special Accounts.....	101,945,175	76,573,119	93,124,313
Refundable Corporation Tax.....	—	196,157,131	235,268,700
Provision for estimated premium on redemption of bonds.....	—	19,993,056	26,041,259
Deferred credits and suspense accounts.....	169,510,146	146,925,684	153,685,772
Unmatured Debt—			
Bonds—			
Payable in Canada.....	16,588,787,500	17,264,611,800	17,939,520,600
Payable in New York.....	370,999,629	365,594,229	160,354,434
Treasury Bills and Notes—			
Payable in Canada.....	2,150,000,000	2,310,000,000	2,480,000,000
Totals, Unmatured Debt.....	19,109,787,129	19,940,206,029	20,579,875,034
Totals, Liabilities.....	27,482,940,350	30,340,137,314	32,926,309,588

Guaranteed Debt.—In addition to the direct debt already dealt with, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act, the guaranteed bonds and debentures of the Canadian National Railways and the guarantee of deposits maintained by the chartered banks in the Bank of Canada. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Credits Insurance Act.

11.—Guaranteed Debt of the Government of Canada, as at Mar. 31, 1967

SOURCE: *Public Accounts of Canada*

Item	Amount of Guarantee Authorized	Amount Outstanding in the Hands of the Public as at Mar. 31, 1967 ¹
	\$	\$
Railway Securities Guaranteed as to Principal and Interest—		
Canadian National Ry. Co. 4½ per cent bonds due 1967.....	72,300,000	72,300,000
Canadian National Ry. Co. 5 per cent bonds due 1968.....	55,800,000	55,800,000
Canadian National Ry. Co. 2½ per cent bonds due 1969.....	70,000,000	70,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1971.....	40,000,000	40,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1971.....	190,561,500	190,561,500
Canadian National Ry. Co. 3½ per cent bonds due 1974.....	200,000,000	200,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1975 ²	6,486,486	6,486,486
Canadian National Ry. Co. 5 per cent bonds due 1977.....	83,925,000	83,925,000
Canadian National Ry. Co. 4 per cent bonds due 1981.....	300,000,000	300,000,000
Canadian National Ry. Co. 5½ per cent bonds due 1985.....	98,500,000	98,500,000
Canadian National Ry. Co. 5 per cent bonds due 1987.....	158,375,000	158,375,000
Other Guarantees—		
Deposits maintained by chartered banks in Bank of Canada.....	Unstated	1,148,002,000
Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements.....	25,000,000	18,693,000
Insured loans made by approved lenders under the National Housing Act, 1954.....	9,500,000,000	5,789,000,000 ³
Insurance and guarantees issued or approved under Section 21 and 21A of the Export Credits Insurance Act.....	1,100,000,000	458,096,000
Loans made by chartered banks under the Farm Improvement Loans Act.....	119,193,000	84,786,000
Loans made by chartered banks under the Veterans Business and Pro- fessional Loans Act.....	2,000	2,000
Loans made by chartered banks and credit unions under the Canada Student Loans Act ⁴	154,300,000	133,608,000
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act.....	2,700,000	525,000
Loans made by chartered banks under the Small Businesses Loans Act.	44,424,000	14,775,000
Notes issued by the Canadian Corporation for the 1967 World Exhibition	Unstated	175,000,000
Loans made by chartered banks to the Canadian Wheat Board.....	555,490,000	329,018,000

¹ In addition, the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1966 amounted to approximately \$13,112,000. Against this amount was a reserve of \$4,135,376 held by Central Mortgage and Housing Corporation.

² These contingent liabilities are expressed in Canadian dollars; they are payable solely in United States dollars and are converted on the basis of \$1 U.S. = \$1.05108 Canadian.

³ As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders at Dec. 31, 1966.

⁴ Includes contingent liability in respect of alternate payments to non-participating provinces.

Table 12 summarizes the national debt position during the period 1959-68 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the Federal Government may be found in the *Public Accounts of Canada*. They are summarized by standard classification in DBS publication *Federal Government Finance, Revenue and Expenditure* (Catalogue No. 68-211).

12.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1959-68

NOTE.—Comparable figures from 1867 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

Year Ended Mar. 31—	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita ¹	Increase in Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita ²
	\$	\$	\$	\$	\$	\$	\$
1959...	20,246,773,669	8,568,383,809	11,678,389,860	667.99	632,115,970	606,615,887	35.52
1960...	20,986,367,010	8,897,173,007	12,089,194,003	676.51	410,804,143	735,630,175	42.08
1961...	21,602,836,960	9,165,721,865	12,437,115,095	681.93	347,921,092	756,664,228	42.34
1962...	22,907,814,464	9,679,677,419	13,228,137,045	712.34	791,021,950	802,919,207	44.02
1963...	24,799,279,690	10,879,509,718	13,919,769,972	736.65	691,632,927	881,598,898	47.47
1964...	25,923,732,116	10,853,582,664	15,070,149,452	783.39	1,150,379,480	954,543,790	50.52
1965...	26,573,425,709	11,068,953,165	15,504,472,544	792.22	434,323,092	1,012,097,143	52.62
1966...	27,482,940,350	11,939,492,485	15,543,447,865	780.33	38,975,321	1,077,295,513	55.05
1967...	30,340,137,314	14,375,186,836	15,964,950,478	782.40	421,502,613	1,156,105,268	57.76
1968...	32,926,309,588	16,168,956,891	16,757,352,697	807.80	792,402,219	1,269,966,267	62.23

¹ Based on the official estimates of population for June 1 of the year indicated.

² Based on the official estimates of population for June 1 of the year immediately preceding the one indicated.

Subsection 3.—Revenue from Taxation

The incidence of Federal Government taxation is dealt with in Section 2. This Subsection includes statistical data on revenue received from individual income tax, corporation tax, estate tax, excise duties and excise taxes; customs receipts constitute a single item in the *Public Accounts of Canada* and are not included here.

Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include employer remittances of tax deductions and Canada Pension Plan contributions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 13 pertain to revenue collections by the Department of National Revenue, Taxation. The collections are for fiscal years ended Mar. 31.

13.—Revenue Collected by the Department of National Revenue, Taxation, Years Ended Mar. 31, 1959-68

NOTE.—Comparable figures from 1917 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

Year Ended Mar. 31—	Income Tax ¹				Estate Tax	Total Collections
	Individual ²	Corporation	Special Refundable Tax	Total		
	\$	\$	\$	\$	\$	\$
1959.....	1,561,062,606	1,075,878,164	...	2,636,940,770	72,535,140	2,709,475,910
1960.....	1,825,547,063	1,234,215,702	...	3,059,762,765	88,430,705	3,148,193,470
1961.....	2,028,733,394	1,380,128,380	...	3,408,861,774	84,879,372	3,493,741,146
1962.....	2,200,573,190	1,303,502,634	...	3,504,075,824	84,579,382	3,588,655,206
1963 ³	2,399,882,273	1,362,655,419	...	3,762,537,692	87,143,312	3,849,681,004
1964 ³	2,579,083,811	1,472,175,333	...	4,051,259,144	90,671,283	4,141,930,427
1965 ³	3,047,590,003	1,804,507,172	...	4,852,097,176	88,625,641	4,940,722,817
1966 ³	3,336,657,371 ⁴	1,891,085,343	...	5,227,742,714	108,352,377	5,336,095,091
1967 ³	4,538,596,826 ⁴	1,874,903,376	196,157,131	6,609,657,333	101,105,631	6,710,762,964
1968 ³	5,471,588,600 ⁴	1,987,546,696	39,111,569	7,498,246,865	102,192,358	7,600,439,223

¹Includes old age security tax.

²Includes "non-resident" taxes.

³Includes amounts of provincial

income tax collected by the Department of National Revenue, Taxation.

⁴Includes Canada Pension Plan

contributions by employers, employees and self-employed collected by the Department of National Revenue, Taxation.

Income Tax Statistics.—Individual income tax statistics are presented in Tables 14 to 16 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes. Table 17 gives statistics of corporation income tax by industry group by size of assets.

14.—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1965 and 1966

City and Province	1965			1966		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Brantford, Ont.....	24,549	122.2	14.0	27,536	138.9	16.1
Calgary, Alta.....	112,264	578.2	67.7	125,266	689.9	83.3
Edmonton, Alta.....	133,359	657.9	73.8	151,566	784.5	90.9
Fort William-Port Arthur, Ont.....	36,720	182.1	19.5	39,385	208.4	23.3
Guelph, Ont.....	20,496	101.7	11.4	22,170	112.8	13.0
Halifax, N.S.....	40,872	196.8	22.5	47,751	235.7	26.5
Hamilton, Ont.....	151,637	813.3	97.2	171,671	957.0	115.8
Hull, Que.....	31,266	144.7	8.8	33,859	166.7	10.1
Kingston, Ont.....	24,437	118.0	13.5	28,666	148.4	17.3
Kitchener-Waterloo, Ont.....	49,693	247.8	29.0	67,549	344.8	41.2
London, Ont.....	73,631	369.8	43.6	84,969	450.2	53.9
Montreal, Que.....	732,120	3,781.7	278.7	776,675	4,229.8	300.2
New Westminster, B.C.....	42,839	219.9	23.6	44,347	247.1	27.7
Niagara Falls, Ont.....	19,598	97.9	10.5	23,314	125.0	14.0
Oshawa, Ont.....	31,753	184.8	23.8	31,323	182.4	23.3
Ottawa, Ont.....	130,524	693.3	84.0	145,323	836.1	105.3
Peterborough, Ont.....	21,348	107.7	11.8	22,344	119.8	13.4
Quebec, Que.....	103,796	509.2	34.1	116,923	594.9	38.6
Regina, Sask.....	47,492	232.1	27.1	51,558	266.1	31.7
St. Catharines, Ont.....	40,282	221.3	26.0	43,214	245.6	29.4
Saint John, N.B.....	26,983	118.5	12.0	29,927	137.6	13.8
St. John's, Nfld.....	26,907	123.3	13.2	29,022	139.1	15.2
Sarnia, Ont.....	21,777	126.7	14.7	27,166	168.0	21.0
Saskatoon, Sask.....	38,763	183.6	20.8	43,231	218.9	25.8
Sault Ste. Marie, Ont.....	25,130	137.0	15.3	26,445	154.5	18.3
Sherbrooke, Que.....	24,329	108.5	6.6	26,191	124.5	7.4
Sudbury-Copper Cliff, Ont.....	37,068	191.8	20.6	42,328	228.1	24.6
Sydney-Glace Bay, N.S.....	24,987	108.6	9.0	28,315	129.0	10.9
Toronto, Ont.....	809,769	4,309.2	562.2	884,039	4,943.7	657.2
Vancouver, B.C.....	274,145	1,467.9	181.1	299,983	1,682.7	214.0
Victoria, B.C.....	56,744	285.6	31.5	66,417	349.5	39.0
Windsor, Ont.....	68,822	380.7	44.3	76,345	448.1	53.6
Winnipeg, Man.....	179,475	854.7	98.1	195,838	973.2	113.8
Other localities.....	2,245,367	10,365.3	929.3	2,445,943	11,815.8	1,076.5
Totals.....	5,728,942	28,341.8	2,879.3	6,276,579	32,596.8	3,366.1

¹Includes old age security tax.

**15.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class,
1965 and 1966**

Occupational Class	1965			1966		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000	\$'000	No.	\$'000	\$'000
Farmers.....	119,511	612,633	60,591	145,828	759,053	73,710
Fishermen.....	5,476	29,985	3,370	8,848	48,322	5,376
Professionals—						
Accountants.....	5,184	69,714	12,748	5,079	70,832	13,043
Medical doctors and surgeons...	15,410	357,963	84,712	15,361	383,918	93,729
Dentists.....	5,357	84,069	16,570	5,267	90,659	18,693
Lawyers and notaries.....	8,374	160,710	37,005	8,145	171,419	41,189
Consulting engineers and archi- tects.....	2,767	53,344	11,509	2,673	56,669	12,809
Employees.....	4,978,382	23,544,991	2,260,573	5,478,233	27,526,163	2,714,183
Salesmen.....	66,185	469,763	57,425	17,661	119,598	13,424
Business proprietors.....	233,670	1,395,723	155,438	250,399	1,537,774	171,226
Investors.....	130,109	890,031	115,204	140,271	982,571	128,198
Pensioners.....	91,719	308,839	19,892	125,874	444,726	30,830
All others.....	66,798	364,076	44,305	72,940	405,139	49,671
Totals.....	5,728,942	28,341,841	2,879,342	6,276,579	32,596,843	3,366,081

¹Includes old age security tax.

16.—Individual Income Tax Statistics, by Income Class, 1965 and 1966

Taxable Income	Taxpayers		Total Income Assessed		Tax Payable ¹		Average Tax ¹	
	1965	1966	1965	1966	1965	1966	1965	1966
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$	\$
Under \$1,000.....	34,859	56,918	18,353	36,735	2,007	1,928	58	34
\$ 1,000 and under \$ 2,000.....	660,276	685,525	1,030,711	1,079,287	36,481	33,372	55	49
\$ 2,000 " \$ 3,000.....	932,921	940,942	2,352,625	2,379,776	142,701	133,866	153	142
\$ 3,000 " \$ 5,000.....	1,944,600	2,011,750	7,743,620	8,037,112	580,876	597,541	299	297
\$ 5,000 " \$10,000.....	1,860,115	2,195,334	12,229,163	14,701,819	1,190,879	1,438,458	640	655
\$10,000 " \$25,000.....	263,900	347,761	3,626,877	4,778,872	550,012	718,753	2,084	2,067
\$25,000 " \$50,000.....	26,612	31,745	885,242	1,060,785	222,760	266,735	8,371	8,402
\$50,000 or over.....	5,659	6,604	455,250	522,457	153,626	175,428	27,147	26,564
Totals.....	5,728,942	6,276,579	28,341,841	32,596,843	2,879,342	3,366,081	503	536

¹Includes old age security tax.

17.—Corporation Taxable Income, by Industry Group by Size of Total Assets, 1965 and 1966

(Millions of dollars)

Asset Size	Agriculture, Forestry, Fishing	Mining, Quarrying, Oil Wells	Manu- facturing	Con- struction	Utilities	Wholesale Trade	Retail Trade	Finance, Insurance, Real Estate	Services	Total
1965										
Under 100,000.....	5.7	2.0	28.7	20.2	13.5	34.2	48.4	54.3	28.9	244.8
100,000 to 249,999.....	8.1	2.6	52.3	34.4	14.7	57.1	53.4	43.9	34.6	301.1
250,000 to 499,999.....	6.2	7.9	138.9	40.8	23.6	107.1	46.0	66.5	42.0	479.0
1,000,000 to 4,999,999.....	5.4	15.1	314.1	29.9	42.6	105.8	36.2	53.5	32.8	635.3
5,000,000 to 24,999,999.....	4.9	35.2	445.8	16.3	50.3	83.1	33.2	176.9	12.5	858.3
25,000,000 and over.....	4.6	99.5	1,221.5	—	384.9	47.0	113.1	245.1	2.9	2,118.5
Totals, Taxable Income.....	34.8	162.3	2,201.3	150.6	529.6	434.3	330.3	640.2	153.6	4,637.0
1966										
Under 100,000.....	6.3	2.6	30.7	36.6	16.3	38.1	60.2	83.7	45.4	310.8
100,000 to 249,999.....	9.3	3.0	56.8	40.0	16.0	58.5	59.9	55.8	41.3	340.7
250,000 to 499,999.....	8.8	8.5	132.4	54.3	26.6	123.7	51.3	73.7	50.1	550.4
1,000,000 to 4,999,999.....	5.5	16.9	344.6	42.7	46.9	124.5	39.3	65.6	41.3	725.2
5,000,000 to 24,999,999.....	3.6	36.5	485.3	27.9	56.4	95.0	38.7	30.0	21.1	813.1
25,000,000 and over.....	1.8	86.6	1,300.4	1.0	444.2	65.0	135.9	394.5	6.8	2,455.9
Totals, Taxable Income.....	35.2	154.1	2,370.0	202.5	606.5	506.8	385.2	720.9	205.9	5,187.2

Succession Duties and Estate Taxes

From Jan. 1, 1947 to Mar. 31, 1963, only Ontario and Quebec levied succession duties, the other provinces having leased this field to the Federal Government under the terms of the federal-provincial tax agreements (see p. 1038). However, British Columbia re-entered the field, effective for all deaths occurring on or after Apr. 1, 1963. The incidence of the estate tax is discussed at pp. 1044-1045. Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1967 amounted to \$101,105,631. In the same year, provincial revenues from succession duties in Quebec, Ontario and British Columbia were \$37,780,000, \$57,913,000 and \$21,883,000, respectively.

Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1966-68 in Table 18.

18.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1966-68

Commodity	1966	1967	1968
	\$	\$	\$
Sales tax ¹	1,395,128,921	1,513,565,998	1,601,092,631
Other Excise Taxes—			
Cigarettes, tobacco and cigars.....	238,080,357	251,434,853	266,686,510
Jewellery, watches, ornaments, etc.....	7,935,585	8,873,785	10,154,970
Matches and lighters.....	1,228,556	1,197,252	1,190,513
Television sets, radios, tubes and phonographs.....	26,960,462	31,186,862	32,581,259
Toilet preparations.....	14,113,979	15,476,344	17,934,068
Wines.....	4,401,603	4,751,633	5,327,282
Sundry commodities.....	2,185,240	1,194,217	1,552,454
Interest and penalties.....	1,620,049	1,951,490	2,183,542
Less refunds and drawbacks.....	-347,733	-485,455	-562,439
Totals.....	1,691,307,019	1,829,146,979	1,938,140,790

¹Net after deduction of refunds and drawbacks; excludes tax credited to the old age security fund.

Excise Duties

Gross excise duties collected are given in the following statement for the years ended Mar. 31, 1966-68. The totals do not agree with net excise duties as shown in Table 8 because refunds and drawbacks are included. A drawback of 99 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

Item	1966	1967	1968
	\$	\$	\$
Spirits.....	156,941,992	158,157,420	180,440,536
Beer or malt liquor.....	107,917,323	113,254,288	120,199,949
Tobacco, cigarettes and cigars.....	187,066,748	196,432,490	194,580,907
Licences.....	33,897	32,477	31,001
TOTALS.....	451,959,960	467,876,675	495,252,393

Section 4.—Federal-Provincial Conditional Grants and Shared-Cost Programs*

During the past decade there has been a rapid increase in federal expenditures on joint federal-provincial programs. These programs take three forms: (1) the Federal Government contributes financial assistance to a program administered by a province; (2) the federal and provincial governments each assume the sole responsibility for the construction, administration and financing of separate aspects of a joint project; or (3) the province contributes financially to a joint program administered by the Federal Government.

The first category of joint programs is by far the most common and such programs are commonly called conditional grant programs. They are characterized by the Federal Government agreeing to make money available to a province on certain conditions, such conditions always specifying the field, service or project to which the money must be applied. In addition to being entrusted with the administration of the programs, the provinces may be required to make a financial contribution to the programs, to provide certain facilities, and to meet certain specified standards in operating the program. The various programs in the field of social policy are good examples of conditional grant programs. Under the hospital insurance program, for instance, the Federal Government undertakes to contribute to participating provinces a specified share of the costs incurred by the provinces in respect of public hospital insurance programs. The federal contribution in each province is equal to 25 p.c. of the average per capita cost of in-patient services in Canada as a whole plus 25 p.c. of the average per capita cost of in-patient services in the province multiplied by the average for the year of the number of insured persons in the province.

Although the hospital insurance program, with its specifications of eligible hospitals, shareable costs and the amount of the federal contribution, is characteristic of some conditional grant programs, there are others in which the conditions are nominal. For example, under the Canada Assistance Plan the Federal Government undertakes to share one half of the cost of welfare paid to recipients in need, the scale and conditions of the assistance to be determined by the provinces. In general, it may be said that the hospital insurance program conforms to the traditional pattern of conditional grants, whereas the Canada Assistance Plan marks an approach in which flexibility and adaptability to local circumstances is allowed to modify insistence on a national uniform standard.

Joint programs in the second category—those in which the federal and provincial governments accept sole responsibility for portions of a total project—are not numerous and are generally of a public works type. The irrigation projects carried out jointly by the Prairie Farm Rehabilitation Administration and the Province of Alberta on the St. Mary's and Bow Rivers in southern Alberta are of this nature. In the St. Mary's irrigation project the Federal Government has undertaken the responsibility for the construction of all main reservoirs, large dams and connecting works, and Alberta has assumed responsibility for the construction of the distribution system and the development and colonization of the new irrigable areas.

Joint programs in the third category are also few in number and the sums of money involved are seldom large. The South Saskatchewan River dam is an example: Canada

* As at January 1969. Prepared in the Federal-Provincial Relations Division, Department of Finance, Ottawa.

Additional Readings:—

Donald V. Smiley, *Conditional Grants and Canadian Federalism* (Canadian Tax Papers No. 32), Toronto, Canadian Tax Foundation, February 1963. Federal-Provincial Relations Division, Department of Finance, *Federal-Provincial Conditional Grant and Shared-Cost Programmes, 1962*, Ottawa, Queen's Printer, October 1963, \$3 (Catalogue No. F2-2563). Appendix to House of Commons Debates of Sept. 10, 1964. Statutes of Canada 1964-65, c. 54.

undertook to pay the costs of the dam in the first instance, with Saskatchewan subsequently reimbursing Canada for one quarter of the federal expenditures (up to a maximum of \$25,000,000) on the dam and reservoir. By Mar. 31, 1968, the full amount had been recovered from Saskatchewan.

The federal transfers to the provinces in respect of the conditional grant and shared-cost programs increased from \$75,000,000 in the year ended Mar. 31, 1954, to an estimated \$1,538,796,000 in 1967-68. The increase was attributable largely to the introduction of the hospital insurance and diagnostic services program in 1958, to the increase in the level of old age assistance, disabled persons' and blind persons' allowances, and to the enlargement and reorientation of unemployment assistance and the Canada Assistance Plan. In 1967-68, federal contributions to the programs in respect of hospital and diagnostic services and unemployment assistance and the Canada Assistance Plan were estimated at \$672,554,000 and \$366,115,000, respectively.

The increasing number and extent of conditional grant and shared-cost programs has occasioned some provincial criticisms and misgivings. It has been argued that the preponderant occupancy of the direct tax field in the postwar years by the Federal Government encouraged the growth of such programs as the provinces were denied the revenues that would have enabled them to provide equivalent programs themselves. At the 1964 Federal-Provincial Conference, the Province of Quebec proposed that a province be given the option to assume full administrative and financial responsibility for certain joint programs upon the Federal Government making available to that province the necessary additional tax room. These proposals were referred to a federal-provincial committee of officials for consideration. As a consequence of their consideration, the Prime Minister of Canada, in a letter to the provincial Premiers dated Aug. 15, 1964, proposed a temporary measure permitting a province for an interim period to assume full financial and administrative responsibility in respect of certain programs pending the development of more permanent arrangements. Parliament approved the necessary legislation—the Established Programs (Interim Arrangements) Act—in April 1965. Under the Act, the Government of Canada was authorized to enter into agreements with any province that wished to assume full financial and administrative responsibility for certain programs in return for fiscal compensation. The nature and number of programs were itemized in the schedules to the Act.

Schedule I listed the major conditional grant programs of a continuing nature and Schedule II listed smaller and more transient programs. The Schedule I programs were: (1) hospital insurance; (2) old age assistance, blind persons' allowances, disabled persons' allowances, and the welfare portion of unemployment assistance; (3) the technical and vocational training programs for youths who were not yet members of the labour force; and (4) the health grant program, except those elements that involved research and demonstration. The Schedule II programs were: (1) agricultural lime assistance; (2) the forestry programs; (3) hospital construction grants; (4) campgrounds and picnic areas; and (5) the roads to resources program. The Act was subsequently amended to include the Canada Assistance Plan.

If a province wished to avail itself of the provisions of the Established Programs (Interim Arrangements) Act in respect of a Schedule I program, it had to enter into a supplemental agreement in which it undertook to assume full responsibility for the administration and financing of the program. The Federal Government undertook to ensure that the province received revenue equivalent to the fiscal burden it assumed. The Federal Government undertook to: (a) abate by a specified percentage the individual income tax on the income of residents of the province; (b) pay associated equalization; and

19.—Conditional Grants and Shared-Cost Programs as at January 1969

Department and Project	Year Estab- lished	Basis of Provincial Apportionment of Federal Funds	Provinces Participating ¹	Provincial Share ²	Maximum Limitation on Grant ³	Federal Contribution 1967-68 ⁴
				p.c.		\$'000
Agriculture—						
Livestock improvement.....	1913	Extent of provincial programs.....	Que., Ont., Sask., Alta., B.C.	5	5	14
Freight assistance on livestock shipments to Royal Winter Fair.....	1946	Extent of provincial programs.....	Que., Man, Sask., B.C. 9 (N.S.)	25 50	O O	29 145
4-H Club activities.....	1900	Extent of provincial programs.....	Alta.	5	F	465
Land Protection and Reclamation— St. Mary's Irrigation.....	1950	Estimated cost.....	Alta.	5	F	1,667
Bow River Irrigation.....	1950	Estimated cost.....	Alta.	5	F	1,667
Assiniboine River— Shellmouth Dam and Portage Diversion.....	1962	Estimated cost.....	Man.	50	O	2,421
South Saskatchewan Dam (dams and reservoir) ad hoc.....	1958	Estimated cost.....	Sask.	25	P	6,661
Assistance in fodder transportation.....	ad hoc	Extent of provincial programs.....	Que., Sask., Alta. B.C.	50 50	O O	210
Crop loss compensation.....	ad hoc	Extent of provincial programs.....	P.E.I., Ont., Man, Sask., Alta., B.C.	0-50 of admin. costs	O	14
Crop Insurance.....	1961	Incidence of disease.....	8 (Nfld., P.E.I.)	60	O	2,632
Compensation—rabies control.....	1959	Extent of provincial programs.....	Que., Ont.	50	O	480
Barberry eradication.....	1964	Flat grant.....	Nfld., N.B.	5	F	117
Grants to special fairs.....	1957					35
Central Mortgage and Housing Corporation—						
Urban renewal.....	1944	Project cost.....	10	50 ⁷	O	8,493 ⁸
Housing for low-income groups.....	1949	Project losses.....	10	25 or 50 ⁷	O	4,200 ⁸
Provision and servicing of land.....	1954	Work completed.....	10	—	O	7,933
Emergency Measures.....	1952	Population.....	9 (P.E.I.)	25-50 ⁷	F	4,785
Energy, Mines and Resources—						
Water Conservation.....	1938	Estimated construction costs.....	Ont.	37½-62½	F	1,305
Greater Winnipeg Floodway.....	1962	Estimated cost.....	Man. Nfld., P.E.I., N.B., Ont., Sask., B.C. N.S., N.B.	23-62½	F	4,455
Roads to Resources.....	1958	Flat grant for provinces.....		50 50	F O	2,732 919
Atlantic Tidal Power Study.....	1966	Extent of Board program.....				
Finance—						
Canada Student Loans—service fees.....	1965	Grant per eligibility certificate.....	9 (Que.)	6	O	223
Fisheries—						
Construction subsidy—fishing vessels.....	1942	Extent of provincial programs.....	Atlantic, Que. P.E.I., N.S., Ont.	—	O	6,248
Industrial development.....	1959	Extent of provincial programs.....		50	O	1,154

19.—Conditional Grants and Shared-Cost Programs as at January 1969—concluded

Department and Project	Year Estab- lished	Basis of Provincial Apportionment of Federal Funds	Provinces Participating ¹	Provincial Share ⁴	Maximum Limitation on Grant ⁵	Federal Contribution 1967-68 ⁶ \$'000
National Health and Welfare—concluded						
Unemployment Assistance.....	1955	Needy unemployed.....	9 (Nfld.)	p.c.	O	20,136
Canada Assistance Plan.....	1966	Individuals in need.....	10	50	O	345,979
Fitness and Amateur Sport.....	1962	Flat grant and population.....	10	50	F	1,195
Disability Advisory Services.....	1954	Extent of provincial programs.....	7 (Nfld., P.E.I., Sask.)	50	O	67
Blind Pensioners—treatment.....	1948	Extent of provincial programs.....	N.S., N.B., Ont.	25	O	17
National Welfare Grants—						
Welfare research.....	1962	Based on need.....	10	50 ⁷	F	2,252
Professional training.....	—	Estimated cost.....	Ont., B.C.	50	O	89
Hospitalization and welfare of indigent immigrants	1947					
National Research Council—						
Technical Information Services.....	1952	Extent of provincial programs.....	7 (Nfld., P.E.I., Que.)	5	O	287
Public Works—						
Trans-Canada Highway.....	1950	Provincial mileage and extent of provin- cial programs.....	10	10-50	O	64,738
Matane-Gaspé North Highway.....	1965	Mileage contribution.....	Que.	9	F	1,919
Portage du Fort Bridge.....	1966	Estimated cost.....	Ont., Que.	50	O	118
Okanagan Flood Control.....	1950	Estimated cost.....	B.C.	50	O	68
Secretary of State—						
Centennial observance.....	1961	Flat grant and population.....	10	—	F	10,464
Trade and Commerce—						
Vital statistics.....	1909	Estimated cost.....	9 (P.E.I.)	5	O	67
Transport—						
Railway Grade Crossing Fund.....	1909	Approved construction.....	8 (P.E.I., N.S.)	121-157	F	4,847
Railway abandonment—highway improvement.....	1965	Half of capitalized value of savings.....	N.B.	0	F	225
Trunk highways.....	1965	Ratio 3:3:1.....	Atlantic	25-50	O	20,563
Municipal Airports.....	1927	Related to airport operational deficit.....	10	—	O	219
Operational subsidy.....	—	Approved capital projects.....	10	50 ⁷	F	1,356
Capital.....	—					

¹ Provinces excepted are shown in parentheses.² As here used, 50 p.c. may mean the province must contribute 50 p.c. of the cost of the project or must match the federal contribution.³ F = a maximum limit set to the federal share; P = a maximum limit to the provincial share; and O = federal and provincial shares are open-ended. Source: *Public Accounts of Canada, 1967-68*.⁴ Not uniform.⁵ Provinces to provide administration, services, facilities, land, loans or to under-
take a specific portion of the project, etc.⁶ Represents the provincial and/or municipal share.⁷ Includes payments to municipalities.⁸ Share for provision of services only.

(c) make an operating cost adjustment. The operating cost adjustment payment or recovery was to ensure that a province did not suffer or benefit financially through assuming the financing of the federal share of the former joint program. Because of their smaller size and lack of continuity, the compensation associated with a Schedule II program did not provide for federal tax abatement or associated equalization payments. The compensation for these programs was to be paid directly to the province by the federal Minister of Finance.

The freedom of a province to vary the nature and condition of a program enumerated in the Established Programs (Interim Arrangements) Act differed between the Schedule I and Schedule II programs. Under the Act, a supplemental agreement with respect to a Schedule I program could vary the conditions of the original agreement only as to the manner in which Canada would contribute to the program and the manner in which accounts were submitted. A supplemental agreement for a Schedule II program might require the program to be continued as in the original authority or it might allow a province to substitute a provincial program having substantially similar objectives.

The Established Programs (Interim Arrangements) Act was designed to provide for an interim period during which a province might assume greater administrative and financial responsibility for the enumerated programs and during which time more permanent arrangements governing joint programs might be devised. The length of the interim period was set out in the Act for each program and varied from Mar. 31, 1967 to Dec. 31, 1970. The tax abatement associated with Schedule I programs was also set out in the Act and varied from 1 p.c. for the health grant program to 14 p.c. for hospital insurance.

The Province of Quebec alone availed itself of the provisions of the above legislation. At the federal-provincial meetings in September and October 1966, the Federal Government offered the provinces revised and more permanent arrangements. The Federal Government proposed to abate, for the period 1967-70, 17 p.c. of the personal income tax in those provinces that would take over the financial responsibility for the hospital insurance, welfare (i.e., Canada Assistance Plan) and health grant programs. To ensure fiscal equity, equalization and operating cost adjustment payments were to be associated with the abatement. As the technical and vocational program was being discontinued in its existing form, the offer did not apply to that program. These proposals were re-offered again at the Nov. 4-5, 1968, meeting of the Ministers of Finance and Provincial Treasurers.

Section 5.—Provincial Government Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the *Public Accounts* figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section. The fiscal years of all provinces end on Mar. 31.

Revenue and Expenditure.—Table 20 shows net general revenue and expenditure of provincial governments for the years ended Mar. 31, 1962-66 and Tables 21 and 22 give details of such revenue and expenditure for the fiscal year ended Mar. 31, 1966. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; and grants-

in-aid and shared-cost contributions from other governments. Table 23 gives details of the amounts transferred to other governments by provincial governments, according to nature of payment.

20.—Net General Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1962-66

Province or Territory	1962	1963	1964	1965	1966
NET GENERAL REVENUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	68,859	76,131	80,991	94,279	111,985
Prince Edward Island.....	17,877	19,200	19,325	21,319	24,522
Nova Scotia.....	102,259	113,788	113,667	129,343	150,405
New Brunswick.....	84,255	90,121	94,623	109,479	128,321
Quebec.....	758,110	864,589	948,355	1,239,841	1,599,506
Ontario.....	927,113	1,095,310	1,181,895	1,358,235	1,602,995
Manitoba.....	118,020	130,615	136,233	162,477	198,787
Saskatchewan.....	156,651	201,283	216,907	236,408	266,433
Alberta.....	272,978	293,917	319,708	383,111	453,309
British Columbia.....	346,420	363,927	398,490	463,776	554,144
Yukon Territory.....	2,357	3,423	4,183	4,704	5,008
Northwest Territories.....	1,861	3,510	4,170	4,558	5,196
Canada.....	2,856,760	3,255,814	3,518,547	4,207,530	5,100,611
NET GENERAL EXPENDITURE¹					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	83,559	100,868	105,216	125,973	130,912
Prince Edward Island.....	19,351	22,545	22,499	24,344	30,117
Nova Scotia.....	107,559	113,180	125,408	132,427	154,582
New Brunswick.....	94,719	100,954	112,045	117,381	131,418
Quebec.....	847,612	951,953	1,096,815	1,437,037	1,853,168
Ontario.....	1,036,709	1,172,444	1,240,240	1,381,400	1,592,954
Manitoba.....	137,237	146,479	162,238	184,874	214,645
Saskatchewan.....	158,744	178,992	208,857	226,463	250,555
Alberta.....	279,128	282,263	276,034	310,797	379,639
British Columbia.....	338,567	356,867	392,370	406,817	538,688
Yukon Territory.....	2,925	4,934	4,616	4,907	6,209
Northwest Territories.....	2,167	3,951	4,027	4,694	6,543
Canada.....	3,108,277	3,435,430	3,750,365	4,357,114	5,289,430

¹Excludes debt retirement.

21.—Net General Revenue of Provincial Governments, Year Ended Mar. 31, 1966

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Mun.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
Taxes—													
Corporations	330	132	1,176	956	38,696	18,642	1,614	1,225	2,999	4,112	—	—	\$ '000
Income—													
Corporations ¹	9,295	941	7,801	6,868	144,404	233,734	22,782	16,363	30,617	50,681	—	—	69,372
Individuals ²	6,153	1,240	13,771	9,458	335,727	297,404	32,383	30,120	41,196	71,879	—	—	523,486
Property	—	—	98	454	—	1,323	—	—	—	8,312	313	—	834,353
Sales	4	567	4	4	—	—	—	4	—	—	—	35	10,716
Alcoholic beverages	98	90	566	351	—	10,515	1,260	133	1,141	2,268	53	—	660
Amusements and admissions	12,134	3,582	24,908	20,275	192,704	253,922	30,738	30,468	44,221	57,084	14	—	34,498
Motor fuel	1,839	402	4	2,398	35,275	2,078	7,837	3,573	—	—	532	805	679,593
Tobacco	—	—	—	—	—	—	—	—	—	—	—	—	53,401
General	20,235	3,566	21,712	14,889	327,508	226,198	—	44,979	—	154,162	—	—	813,339
Other commodities and services	24	—	484	—	—	—	—	—	—	—	—	—	25,101
Succession duties	—	—	—	—	36,327	56,968	—	—	—	—	—	—	107,892
Hospital insurance premiums	—	—	4	—	—	132,935	13,171	17,965 ³	—	14,992	—	—	184,071
Other	348	13	103	126	2,376	11,723	1,362	418	281	—	—	—	17,034
Totals, Taxes	50,516	10,533	70,559	55,775	1,146,002	1,260,248	120,199	145,275	120,456	363,794	952	840	3,354,149
Government of Canada—													
Federal provincial fiscal arrangements	33,849	9,679	47,657	43,114	212,587	16,837	28,298	29,014	6,008	895	2,629	2,868	433,465
Statutory subsidies	9,656	657	2,132	1,745	3,962	4,624	2,117	2,124	2,887	1,672	—	—	31,576
Share of income tax on power utilities	—	57	683	21	979	1,321	44	10	2,569	437	—	—	6,387
Totals, Government of Canada	43,768	10,393	50,472	44,883	217,528	22,782	30,459	31,178	11,464	3,004	2,629	2,868	471,428
Privileges, Licences and Permits—													
Liquor control and regulation	4,587	43	254	—	21,265	30,500	3,121	128	1,295	666	18	69	61,926
Motor vehicles	3,466	974	7,560	6,418	57,092	109,664	13,289	9,990	16,673	27,513	229	85	243,953
Natural resources	3,259	19	1,624	4,993	41,521	45,683	7,349	44,411	257,417	101,962	38	49	508,338
Other	1,174	140	848	1,102	15,893	11,324	1,973	1,890	3,556	3,818	140	42	41,900
Totals, Privileges, Licences and Permits	12,466	1,176	10,286	12,513	135,774	188,171	25,732	56,419	278,941	133,659	425	245	856,107
Sales and services													
Fines and penalties	561	441	3,529	2,326	12,856	22,406	3,659	8,585	9,295	10,716	41	52	74,527
Net income from sales of alcoholic beverages by Provincial Liquor Commissions	471	101	526	439	3,667	3,475	792	1,166	2,313	1,378	38	32	14,401
Other revenue of government enterprises	3,896	1,812	15,003	12,224	60,376	95,987	17,924	18,443	29,211	41,205	920	1,157	298,158
Other revenue	307	63	27	161	19,648	—	—	4,725	1,225	—	—	—	25,625
Totals, Net General Revenue	111,985	24,522	150,465	128,321	1,599,506	1,602,995	198,787	266,433	453,399	554,144	5,008	5,196	5,109,611

¹ Collected by the Federal Government for all provinces except Quebec and Ontario.

² Collected by the Federal Government for all provinces except Quebec.

³ Includes 5,573 premiums for medical care insurance.

⁴ Taxed under the general sales tax.

22.—Net General Expenditure of Provincial Governments, Year Ended Mar. 31, 1966

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General government.....	7,213	4,088	6,099	7,975	60,202	75,892	5,730	10,511	8,749	24,604	706	289	212,058
Protection of persons and property.....	4,801	596	4,530	3,505	72,633	76,129	8,606	9,125	21,896	22,987	536	850	225,594
Transportation and Communications—													
Highways, roads and bridges.....	32,377	7,647	34,796	33,262	288,402	337,406	41,725	47,047	74,064	94,707	860	205	992,498
Waterways.....	13	13	510	593	460	—	7	620	275	2,154	158	—	4,839
Other.....	—	48	57	—	1,718	958	160	—	7	—	27	8	3,603
Totals, Transportation and Communications.....	32,519	7,708	35,363	33,855	290,580	338,364	41,892	48,194	74,346	96,861	1,045	213	1,000,940
Health and Social Welfare—													
Health—													
General health.....	289	146	158	395	2,078	5,785	387	786	1,145	1,516	119	2	12,806
Public health.....	1,027	449	2,594	2,261	13,592	13,589	4,311	3,785	1,945	5,716	124	757	50,100
Medical, dental and allied services.....	2,634	26	894	263	2,707	3,932	1,920	25,341	5,418	7,786	—	57	50,978
Hospital care.....	16,265	3,000	29,890	21,570	401,464	289,608	37,148	41,458	54,094	60,437	337	604	955,975
Social Welfare—													
Old age assistance.....	2,148	493	2,193	2,177	38,647	10,000	2,195	2,166	2,963	2,778	14	76	65,850
Other aid to the aged.....	135	1,871	282	213	7	6,773	989	5,586	1,758	12,820	12	—	30,446
Aid to blind persons.....	152	19	178	160	2,454	145	234	145	201	337	2	11	50,100
Aid to disabled persons.....	819	370	1,533	1,052	17,644	7,772	711	864	1,623	1,016	—	26	33,450
Aid to unemployed and unemploy- ables.....	8,296	—59	4,058	836	73,955	20,121	3,991	5,678	17,387	10,431	36	88	144,818
Maternity allowances.....	255	—	1	—	16,227	16,227	1	1	503	—	—	—	39,997
Child welfare.....	917	236	1,234	2,969	37,511	15,633	2,973	1,665	3,804	5,020	63	100	70,125
Labour.....	95	27	246	458	4,686	2,924	517	341	546	651	—	11	10,502
Winter works projects in municipali- ties.....	—	185	54	—	17,138	2,974	95	514	900	463	—	172	22,525
Other social welfare.....	1,360	83	62	678	13,882	6,481	2,644	2,946	3,257	2,569	100	19	24,081
Totals, Health and Social Welfare	34,137	7,101	43,476	33,162	646,647	402,346	58,026	91,364	95,544	111,560	807	1,923	1,526,093
Recreational and cultural services.....	670	351	1,910	520	8,004	11,670	3,489	5,493	4,630	5,829	275	105	42,946
Education—													
Schools operated by local authorities.....	24,233 ²	4,491	28,039	13,181	295,935	357,281	46,318	47,867	94,149	91,078	1,846	2,684 ³	1,007,092
Universities, colleges and other schools	2,240	656	8,328	6,856	146,113	94,804	13,692	18,133	44,762	26,438	267	29	359,458
Education of the handicapped.....	1,453	33	348	334	9,263	9,263	1,200	488	821	877	3	40	15,405
Superannuation and pensions.....	—71 ⁴	3	2,502	594	—367 ⁴	39,583	462	1,391	732	4,339	—	—	48,968

23.—Amounts Transferred to Other Governments by Provincial Governments, Year Ended Mar. 31, 1966

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C. ¹	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Transferred to Local Governments—													
Shared-revenue contributions ²	—	—	10	—	—	1,553	—	—	286	—	—	—	1,859
Subsidies.....	2,995	432	1,378	9,709	104,824 ³	35,074 ⁴	2,706	—	16,926	19,004	189	161	193,398
Grants in lieu of local taxes on provincial govern- ment property ⁵	—	—	—	—	—	2,260	1,212	12	1,643	—	—	—	5,127
Grants-in-Aid and Shared-Cost													
Contributions—													
Corrections.....	—	—	4	28	—	477	—	4	—	—	—	—	513
Police protection.....	—	—	—	—	—	396	—	—	111	—	—	—	507
Fire protection.....	—	2	—	—	1,900	262	—	—	—	—	—	—	2,164
Other protection.....	—	—	—	—	15	38	—	—	—	—	—	—	53
Highways, roads and bridges.....	444	51	516	417	10,485	102,564	8,364	11,011	7,854	496	33	70	142,305
Public health.....	—	—	368	—	3,720	4,017	90	272	1,840	320	21	—	10,648
Hospital care ⁶	117	—	4,218	457	—	47	99	2	—	—	—	—	263
Aid to aged persons (homes).....	—	—	—	—	2	2,180	—	—	—	63	—	—	4,679
Aid to unemployed and unemployables.....	—	25	—	2,205	—	25,504	2,057	6,145	2,482	22,673	—	153	2,252
Child welfare.....	—	—	—	406	—	9,821	1,194	—	3,075	4,467	—	—	61,424
Other health and social welfare.....	236	427	165	—	41,640	8,746	—	—	—	—	—	173	10,228
Parks, beaches and other recreational areas.....	—	—	—	—	—	519	25	—	—	—	—	—	60,123
Other recreational and cultural services.....	—	—	22	—	—	501	—	467	37	19	—	—	544
Schools operated by local authorities.....	7	4,165	25,826	10,185	291,532	383,061	36,297	46,668	89,734	91,290	8	377 ⁷	1,027
Lands—													
Settlement and agriculture.....	—	—	—	—	245	1,330	9	192	273	21	—	—	2,079
Other.....	—	—	—	23	50	5,001 ¹⁰	102	651	—	—	—	—	5,917
Local government planning and development.....	202	6	20	147	—	1,824	—	384	322	36	—	—	2,641
Civil defence.....	—	—	28	—	1,040	1,570	—	1,846	160	599	—	—	5,361
Other payments.....	—	34	173	258	3,827 ¹¹	1,898	—	1,915	214	—	—	—	7,819
Totals, Transferred to Local Govern- ments.....	3,994	5,142	32,731	24,034	459,280	583,813	52,155	70,233	124,976	138,988	222	955	1,501,523
Transferred to Government of Canada—													
Police services—RCMP.....	1,989	182	1,037	747	—	—	1,476	1,854	2,913	3,640	—	—	13,838
Other ¹²	—	—	—	—	35	69	—	2,145	—	—	—	1,125	3,374
Totals, Transferred to All Governments	5,983	5,324	33,768	24,781	459,315	583,882	53,631	74,232	127,889	142,628	222	2,080	1,518,735

¹ Home-owners' subsidies are not included; they are considered as assistance to the home-owners and in municipal revenue compilations they form part of taxation revenue rather than contributions from the provincial government.

² N.S.—share of Crown land leases; Ont.—share of liquor licenses; Alta.—share of liquor fines.

³ Re- presents compensation payable to municipalities in lieu of right to impose a sales tax.

⁴ Includes payments under the Municipal Unconditional Grants Act \$27,642,000.

⁵ Does not in- clude grants in lieu of taxes paid by provincial government enterprises.

⁶ Excludes amounts paid directly to municipal hospital boards.

⁷ Primary and secondary schools are operated on a denominational basis; grants to denominational schools amounted to \$23,030,000.

⁸ Local schools are operated by the territorial government and by religious denominations.

⁹ Local schools are operated by the Federal Government, religious denominations and school districts; the amount shown was paid to school districts.

¹⁰ Includes grants of \$5,023,000 to conservation authorities.

¹¹ Includes \$3,263,000 interest on debt assumed on loans by the City of Montreal and the Montreal Metropolitan Corporation.

¹² Consists of: Que.—Department of Mines and Technical Surveys \$55,000; Ont.—annuities and bonuses to Indians \$37,000 and Department of Public Works (flooding and other damage) \$32,000; Sask.—South Saskatchewan River Dam Project agreement \$2,143,000 and Department of Northern Affairs and Natural Resources (water rights) \$2,006¹³; N.W.T.—fees for pupils in federal schools \$1,125,000.

Debt of Provincial Governments.—The latest data at the time of printing on provincial debt were those for Mar. 31, 1965, given in the 1967 Year Book at pp. 1062-63. Figures for Mar. 31, 1966, included in the 1968 Year Book were later considered to be incomplete and should not be used.

Section 6.—Municipal Government Finance

Municipal Taxation.—Table 24 shows, for the year 1965, local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, these figures should not be used as a basis for interprovincial comparisons of the relative burden of municipal taxation.

24.—Municipal Taxation, by Province, 1965

Item	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Taxation revenue..... \$'000	7,380	4,138	51,499	40,422	243,576	877,903
Tax Collections, Current and Arrears—						
Total..... \$'000	7,314	3,981	50,013	39,844	..	877,716
Percentage of taxation revenue..... p.c.	99.10	96.21	97.11	98.57	..	99.98
Taxes receivable, current and arrears..... \$'000	3,067	1,267	15,980	14,384	70,934 ¹	87,193
Percentage of taxation revenue..... p.c.	41.56	30.62	31.03	35.58	..	9.93
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon Territory	North-west Territories
Taxation revenue..... \$'000	102,693	109,917	161,823	199,546	227	518
Tax Collections, Current and Arrears—						
Total..... \$'000	106,171	106,153	156,108	199,993	220	476
Percentage of taxation revenue..... p.c.	103.38	96.58	96.47	100.22	96.92	91.89
Taxes receivable, current and arrears..... \$'000	11,829	19,945	31,791	7,261	134	137
Percentage of taxation revenue..... p.c.	11.52	18.15	19.65	3.64	59.03	26.45

¹Data for Quebec schools not available.

Municipal Revenue, Expenditure and Debt.—Tables 25, 26 and 27 show comparative totals and details of current revenue and expenditure of municipal governments, by province, and Table 28 sets out the direct and indirect debt of local governments for the fiscal years ended nearest Dec. 31, 1965.

25.—Current Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1965

Province	Current Revenue	Current Expenditure	Province or Territory	Current Revenue	Current Expenditure
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	11,673	11,385	Saskatchewan.....	143,418	146,407
Prince Edward Island.....	4,975	5,037	Alberta.....	234,742	234,090
Nova Scotia.....	67,325	67,679	British Columbia.....	279,841	280,152
New Brunswick.....	58,872	59,381	Yukon Territory.....	547	490
Quebec ¹	444,028	447,579	Northwest Territories.....	994	1,054
Ontario.....	1,155,055	1,153,415			
Manitoba.....	124,583	125,620	Canada.....	2,526,053 ¹	2,532,289 ¹

¹Data for Quebec schools not available.

26.—Details of Current Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1965

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes, General and School—													
Real property.....	4,575	3,308	38,820	27,835	160,848	851,927	85,855	102,052	139,011	179,998	187	450	1,594,866
Personal property.....	3	181	7,861	8,958	35,117	3	7,230	2	8,792	5,370	...	...	17,003
Business.....	1,508	457	1,902	1,902	35,117	43	...	...	...	...	...	...	60,477
Poll.....	209	138	1,764	3,277	4,248	...	...	35	...	...	...	...	5,474
Sales and amusement.....	987	...	...	...	4,248	...	...	1,267	...	...	...	...	7,065
Other.....	37	1	523	171	5,312	...	54	154	—	8	...	...	6,260
Special assessments (owner's share) and charges.....	61	53	539	181	38,051	25,033	8,991	6,409	14,020	14,170	40	49	108,497
Totals, Taxes¹.....	7,380	4,138	51,499	40,422	243,576²	877,903	102,693	109,917	161,823	199,546	227	518	1,799,642⁴
Licences and permits.....	224	69	522	325	8,834	9,529	1,942	1,936	3,801	8,706	32	14	35,934
Interest, tax penalties, etc.....	9	8	846	405	6,047	11,564	2,140	1,896	3,018	3,170	6	10	29,119
Contributions, Grants and Subsidies—³													
Governments.....	2,675	555	10,640	15,333	138,664	189,205	9,796	15,398	29,318	46,343	270	366	458,563
Government enterprises.....	109	95	1,671	1,007	1,218	12,086	3,703	8,090	20,280	6,189	—	4	54,482
Other.....	506	3	258	124	751	626	560	899	81	1,848	—	68	5,724
Miscellaneous revenue.....	770	107	1,889	1,266	44,938	54,142	3,749	5,282	16,411	14,039	12	14	142,609
Totals, Revenue.....	11,673	4,975	67,325	58,872	444,028	1,455,055	124,583	143,418	234,742	279,841	547	994	2,526,053⁵

¹ Included with personal property. ² Local taxes for school purposes, as follows in thousands of dollars: Nfld., 664; P.E.I., 2,636; N.S., 30,441; N.B., 31,531; Que., not available; Ont., 391,294; Man., 46,916; Sask., 53,796; Alta., 81,112; B.C., 101,075; total, 739,465.

³ Includes some in lieu of taxes, not separable.

⁴ Data for Quebec schools not available.

27.—Details of Current Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1965

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General government.....	1,328	283	4,143	3,867	68,467	70,023	9,253	8,962	12,430	14,586	76	146	193,564
Protection of persons and property.....	887	526	8,435	5,966	91,348	142,241	14,741	11,044	26,403	35,609	122	55	337,427
Public works.....	2,677	465	3,140	3,372	81,150	162,319	14,602	26,756	30,805	19,308	87	128	344,809
Sanitation and waste removal.....	1,133	119	1,455	815	15,984	50,653	3,858	3,180	7,125	9,175	48	47	93,592
Health.....	10	1	3,736	1,736	6,836	20,005	2,180	3,906	14,828	3,204	—	13	56,455
Social welfare.....	2	63	3,806	4,202	7,746	61,335	4,370	6,772	5,325	28,634	—	3	122,258
Education.....	664	1,822	23,708	25,590	..	306,885	38,413	48,081	61,717	80,133	—	292	587,305 ¹
Recreation and community services.....	367	105	1,315	1,335	24,243	44,767	5,029	5,659	10,322	13,808	21	40	107,011
Debt Charges—													
Debt service and other long-term ²	1,354	1,447	13,329	8,696	94,160	204,115	20,182	15,521	45,673	49,656	12	28	454,173
Other.....	317	71	658	704	3,370	16,296	462	1,170	577	810	—	1	24,436
Contributions to own government enterprises (deficits and levies).....	592	8	74	571	—	13,573	4,067	4,538	4,110	2,579	—	91	30,203
Provision for reserves.....	260	86	1,334	777	2,561	13,078	2,994	3,230	3,709	7,373	1	—	35,403
Contributions to capital and loan fund.....	1,592	22	1,706	528	46,717	30,329	3,960	5,329	7,094	14,031	112	168	111,588
Joint or special expenditure.....	—	—	—	—	—	3,458	255	—	—	129	—	—	3,842
Miscellaneous expenditure.....	202	19	790	1,222	4,997	14,338	1,254	2,259	3,972	1,117	11	42	30,223
Totals, Expenditure.....	11,385	5,037	67,679	59,351	447,579¹	1,153,415	125,620	146,407	234,090	280,152	490	1,054	2,532,289¹

¹ Data for Quebec schools not available.² Charges on debentures issued for school purposes are included herein and not under Education.

28.—Debt of Municipal and School Corporations, as at Fiscal Year-Ends Nearest Dec. 31, 1965

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que. ¹	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt (less Sinking Funds)—													
Debtenture debt.....	22,706	12,347	117,065	89,392	1,722,301 ²	2,278,195	258,043	226,912	558,679	505,717	820	227	5,882,404 ²
Less sinking funds.....	162	2,511	2,868	8,107	2,976	164,998	30,475	19,198	4,488	62,267	—	—	298,050
Net debtenture debt.....	22,544	9,836	114,197	81,285	1,719,325	2,113,197	227,568	207,714	554,191	533,450	820	227	5,584,354
Temporary loans and bank overdrafts..	20,589	1,919	26,317	16,471	102,849	154,066	26,147	19,664	17,081 ³	22,979	—	37	408,119 ²
Accounts payable and other liabilities..	11,572	626	12,391	9,378	163,677	233,738	28,131	33,385	60,239	42,524	245	448	596,354
Totals, Direct Debt (less Sinking Funds).....	54,705	12,381	132,905	107,134	1,985,851²	2,501,001	281,846	269,763	631,511	598,953	1,065	712	6,588,827²
Indirect Debt (less Sinking Funds)—													
Guaranteed bonds or debentures.....	—	—	452	4,666	—	1,424	2,189	—	—	—	—	—	8,731
Less sinking funds.....	—	—	121	—	—	—	—	—	—	—	—	—	121
Net guaranteed bonds or debentures....	—	—	331	4,666	—	1,424	2,189	—	—	—	—	—	8,610
Totals, Indirect Debt (less Sinking Funds).....	—	—	331	4,666	—	1,424	2,189	—	—	—	—	—	8,610
Grand Totals.....	54,705	12,381	133,236	111,800	1,985,851²	2,502,425	284,035	269,763	631,511	598,953	1,065	712	6,597,437²

¹ Data for Quebec schools not available.² Includes \$47,547,000 debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.³ Includes treasury bills of \$509,000.

CHAPTER XXIV.—TRENDS IN ECONOMIC AGGREGATES*

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

In this Chapter various statistical statements and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. These integrated aggregative economic accounts provide an interrelated framework for economic analysis and the observation of changes in the functioning of the Canadian economy and its structure and in economic and financial relationships with other countries.

Section 1.—National Accounts

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 4 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. In the other tables in which the data are expressed in current dollars, year-to-year changes must be considered in relation to price changes over the period.

* Sections 1 and 2 were prepared in the National Accounts, Production and Productivity Division, and Sections 3, 4 and 5 in the Balance of Payments and Financial Flows Division of the Dominion Bureau of Statistics. Section 6 was prepared by the authorities concerned.

The tables on pp. 1093-1098 cover the more important aspects of the national income analysis in annual terms. Definitions are as follows:—

National Income.—Net national income at factor cost measures the current earnings of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross National Product.—Gross national product, by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

Personal Income.—Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.—Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to non-residents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

Economic Activity in 1967

A seventh consecutive year of expansion brought Canada's gross national product (GNP) to the level of \$62,100,000,000 in 1967, an increase of 6.8 p.c. following the exceptionally large advance of 11.3 p.c. of the previous year. Prices continued to rise but at a somewhat lower rate than in 1966—3.9 p.c. compared with 4.5 p.c.; the gain in real terms was reduced to 2.8 p.c. A dampening influence on GNP was exerted by a western grain crop much smaller than the record crop of 1966 which bolstered that year's rise; excluding the accrued net income of farm operators, the advance in GNP in value terms was 8 p.c. in 1967 compared with 10½ p.c. in 1966.

For the year as a whole, the general profile of the economy was one of a widespread easing of demand pressures. Every major expenditure category showed a lower rate of increase than in 1966 except business gross fixed capital formation which dropped by 1 p.c.; within this category, divergent movements occurred, with residential construction expenditures rising much more strongly than in 1966 and outlays on plant and equipment declining by 3½ p.c. and 2 p.c., respectively.

A major source of strength was personal expenditure; buoyed up by outlays related to Expo, it increased by over 8 p.c., not much lower than the 1966 rate of advance. Both non-durables and services continued to show strength, while durables advanced only moderately despite a 3-p.c. rise in new and used car purchases which showed no change in the previous year. In real terms, the advance in total spending of over 4½ p.c. was also close to the gain of 1966. However, there was a shift in price movements; food prices were virtually unchanged, while a pronounced degree of price acceleration in durables and services accounted for half of the increase in value terms.

Developments in the external sector were among the highlights of the year. The current account deficit on a national accounts basis narrowed substantially to \$549,000,000 from \$1,207,000,000 in 1966, as exports of goods and services increased by 11½ p.c. while imports advanced 6 p.c. over the year but declined in the last two quarters. An increase

in merchandise exports of $10\frac{1}{2}$ p.c. combined with an 8-p.c. advance in imports more than doubled the merchandise surplus to \$480,000,000. Exports to the United States, where economic activity quickened in the second half of the year after a slowdown in the first half, rose 17 p.c. while imports from that country advanced $12\frac{1}{2}$ p.c., substantially reducing the trade deficit. Notable also was an increase of 45 p.c. in exports to Japan. On non-merchandise transactions, receipts increased by over 17 p.c. while payments rose barely 2 p.c., thus reducing the deficit by \$402,000,000. Prominent in this development was the Expo-affected tourist and travel account which switched from a deficit of \$63,000,000 to a surplus of \$427,000,000, only the second surplus since 1950.

Government expenditures on goods and services rose considerably less than in 1966— $9\frac{1}{2}$ p.c. compared with $17\frac{1}{2}$ p.c. All levels of government reflected the reduced rate of advance; at the federal level the rise was $8\frac{1}{2}$ p.c. as against 19 p.c., and at the provincial-municipal level it was 10 p.c. compared with $16\frac{1}{2}$ p.c. Inclusive of contributions to the Canada and Quebec Pension Plans, the combined government surplus was reduced by more than one half to \$157,000,000. Excluding the pension plan contributions, the provincial-municipal deficit narrowed by \$62,000,000 and the Federal Government switched from a small surplus to a deficit of \$256,000,000.

Notable differences from the pattern of the previous year occurred among the components of business gross fixed capital formation. Expenditures on new residential construction advanced $7\frac{1}{2}$ p.c., up sharply from 2 p.c. in 1966. Aided by developments in the money market and government action relating to interest rates on NHA-approved loans and to CMHC direct loans to builders in the spring, housing starts jumped sharply in the second quarter and remained near this level in the latter half of the year. For the year, starts increased to 164,000, some 30,000 units over 1966. This was heavily concentrated in multiple units which rose to 92,000; single-family unit starts advanced by 2,000.

In striking contrast, investment in plant and equipment declined by 3 p.c. after annual increases of over 20 p.c. in the period 1964-66. Movements in the two components diverged somewhat during the year; non-residential construction declined for the first three quarters and recovered in the fourth, while machinery and equipment declined in the last three quarters after a small increase in the first. With the exception of investment in manufacturing, outlays on plant and equipment ran slightly ahead of the preceding year; however, manufacturing investment declined by 14 p.c. with drops of 9 p.c. and $19\frac{1}{2}$ p.c. in non-durables and durables, respectively.

Investment in non-farm business inventories in 1967 showed a small increase for the year but was almost \$600,000,000 below the accumulation of 1966. Over three quarters of the reduction was at the manufacturing level, where durables shifted from sizable accumulation to moderate liquidation, but reduced investment also occurred at the retail and wholesale levels.

Implicit in the aggregates of the income side are some significant developments relating to output and employment. Excluding agriculture, the gain in output as measured by the indexes of real domestic product was slightly more than 3 p.c.; the increase in services was somewhat lower than in the two preceding years, while the rise in the goods-producing sector was much reduced largely due to an increase of only one half of 1 p.c. in durable manufacturing. As a result, there was a considerable shift in the composition of output, with services accounting for over two thirds of the increase compared with two fifths in the two previous years. The labour force increased almost as rapidly as in 1966 but employment rose by a substantially lesser amount and remained virtually stationary in the latter half of the year. The industrial composite employment index recorded a $1\frac{1}{2}$ -p.c. advance while declines occurred in the durable manufacturing and construction indexes. Most of the increase in employment occurred in the service sector; with greater job opportunities for women in this area, the rise in female employment was much larger than that for men—6 p.c. as against 2 p.c.—and for the first time since 1961 women accounted for

more than half of the total increase. The unemployment rate rose from 3.6 p.c. in 1966 to 4.1 p.c., and reached 4.7 p.c. during the last quarter before declining somewhat in early 1968.

Labour income increased by over 9 p.c., reduced from the exceptionally large $13\frac{1}{2}$ -p.c. rise of 1966; almost three quarters of the advance occurred in the service-producing sector, while pay increases in both goods and services were greater than in 1966. Preliminary indications are that the increase in output per person employed in the commercial non-agricultural industries during 1967 was lower than that of 1966, itself a below-average year. Unit costs continued to rise and were partly absorbed by profit margins; gross profits advanced 1 p.c. compared with 3 p.c. in 1966, while net profits declined a further $2\frac{1}{2}$ p.c. after a 1-p.c. decline previously.

A special feature of 1967 was agriculture. The value of the grain crop was some 22 p.c. lower than that of the record 1966 crop. Reflecting this, accrued net income of farm operators declined 23 p.c. after the 34-p.c. increase of 1966, although it was some 3 p.c. higher than in the less-exceptional year of 1965. An unusual development, however, was a break in the downward trend of agricultural employment which increased for the first time since 1954; combined with lower production, this resulted in a very substantial reduction in output per person employed.

Price increases in 1967, although somewhat lower than in the previous year, were still strong and widespread. Over-all prices as measured by the implicit price index of gross national expenditure rose 3.9 p.c. compared with 4.5 p.c. in 1966, decelerating in the second part of the year and especially in the last quarter. The most striking increases occurred in non-food goods, in services, in government expenditure and in construction. Within non-food goods there was an increase in the price of durables, reversing the apparent trend of the past few years toward slowly declining prices. Virtually unchanged food prices—after the strong rises of previous years, culminating with a 6.2-p.c. increase in 1966—exerted a moderating influence on the over-all price advance. The decline in machinery and equipment prices was also a dampening factor.

In personal expenditures, all major non-food categories showed accelerating rates of price increase, in part a reflection of increased indirect taxes by all levels of government. The rise in durable goods prices started in the second quarter and was maintained at a somewhat slower rate through the remainder of the year. Particularly notable were the more than 5-p.c. rise in the prices of furniture and miscellaneous durables and the 1.6-p.c. rise in car prices. There was a marked acceleration in the rate of price increase of non-durables other than food; many major items such as clothing, newspapers and magazines, electricity, tobacco, and gasoline, grease and oil showed increases of between 3 p.c. and 7 p.c. The implicit index for services rose by 5.7 p.c., the strongest in many years. Most prominent were the increases in prices associated with medical care, recreation, education and transportation. Rents also rose strongly, continuing the acceleration noted in 1966. Within food, the rate of price increase of most components was reduced, while some items—pork, poultry, eggs and fresh vegetables—declined sharply.

More than half of the very strong rises in the implicit price indexes for both residential and non-residential construction was largely attributable to labour cost for the second consecutive year. Machinery and equipment prices declined for the first time since the current expansion began in 1961, as a result of the removal in June of the federal sales tax on production machinery and equipment.

The increase in export prices was more moderate than in the previous year. Some important components showed price declines, notably wheat and meat and meat preparations.

Components of Demand.—Personal expenditure on goods and services reached a level of \$37,700,000,000 in 1967, an increase of some 8 p.c. compared with $8\frac{1}{2}$ p.c. in the

preceding year. Expo and other Centennial events contributed substantially to this rise, although it should be noted that the large expenditures made by foreign tourists are not included in this aggregate.*

The large increase in expenditures on non-durables was broadly based but especially notable were rises of some 11 p.c. in alcoholic beverage purchases, 10 p.c. in outlays on energy sources and 9 p.c. on drugs and cosmetics. Total food outlays increased at a lower rate than in 1966—6 p.c. as against 7 p.c.—with prices increasing only fractionally after a 6-p.c. advance previously. The gain in volume terms, however, was significantly larger. The slightly higher rate of advance in durables in 1967—4½ p.c. as against 4 p.c.—was due to a 3-p.c. gain in new and used car purchases which showed no change in 1966. All other components had lower rates of increase than in the previous year, with furniture rising 4 p.c., home furnishings 8 p.c., and radios and appliances 7 p.c. If price increases are allowed for, the real increase in durables outlays in 1967 was half of the increase of the previous year.

The 11½-p.c. increase in services, excluding net expenditure abroad, was also broadly based but the most pronounced increases were in the series affected by Expo. Recreation expenditures rose by almost 30 p.c. and outlays on purchased transportation by over 19 p.c. Other significant advances were registered in medical outlays and household operations, 10½ p.c. each, and in shelter, 9 p.c. Sharp price increases accounted for fully half of the over-all rise.

Business gross fixed capital formation, including housing, totalled \$12,400,000,000 in 1967, a decline of 1 p.c. from the 1966 level. While outlays for new housing advanced 7½ p.c., business expenditure on plant and equipment fell by 3 p.c., consisting of declines of 3½ p.c. and 2 p.c., respectively, in non-residential buildings and structures and in machinery and equipment. These decreases resulted from a considerable falling-off in investment activity by manufacturers of both durables and non-durables and by service establishments. The diminution of 2 p.c. in new machinery and equipment outlays reflected major cutbacks by manufacturers. The 3½-p.c. drop in non-residential building and engineering construction was associated with decreases for all industries except agriculture and, notably, electric power; however, the service industry expenditure decline was confined to the commercial sector, with university and hospital construction continuing upward. A number of fiscal measures were effected in 1967 to prevent a larger decline in business investment expenditures; the sales tax on production machinery and apparatus was lowered from 11 p.c. to 6 p.c. in April and completely removed in June; the refundable tax on business profits was terminated on Mar. 31; and the previous year's measure regarding capital cost allowances was removed.

The 7½-p.c. increase over 1966 brought the value of new residential construction up to \$2,300,000,000. However, completions actually fell by about 9 p.c. from 162,000 to 149,000 units as a consequence of the low carryover of units under construction (89,000) at the beginning of the year but by the end of 1967 units under construction had risen to 103,000; the total number of starts during the year was 164,000. Although total mortgage approvals increased from the low 1966 level, the major part of the improvement was the result of increased lending by approved lenders under the National Housing Act and continued provision of funds by CMHC. In particular, as a result of changes in the Bank Act in May, chartered banks figured prominently in the mortgage market for the first time. Conventional mortgage lending, although up for the year, remained substantially below the 1965 level despite rises in interest rates during the year.

* Personal expenditure on consumer goods and services is a measure of all expenditures by Canadian residents, including those temporarily abroad. Since measures of the value of outlays on consumer goods and services in Canada are derived from sales made within the territorial boundaries of Canada, the values must be adjusted to exclude expenditures abroad by Canadian residents and to exclude outlays in Canada by non-residents. This adjustment is called *net expenditure abroad*. Net expenditure abroad is composed of outlays on both commodities and services. As it is impossible to determine these elements in the net figures, the whole adjustment has traditionally been included with services. The item is generally small and does not significantly distort period-to-period comparisons of either aggregates or individual series. However, with the exceptional influx of tourists in the second and third quarters of 1967, the adjustment to exclude purchases by non-residents has become large, distorting the statistical continuity of the non-durable and services aggregates and certain of their components.

Investment in non-farm business inventories showed an accumulation of \$189,000,000 in 1967, a sharp drop from the \$777,000,000 of the previous year. Manufacturing contributed about 20 p.c. of the total accumulation, entirely concentrated in the investment of non-durable-goods-producing industries which more than offset a noticeable liquidation in the stocks of durable goods; the stock-to-shipments ratio for the year as a whole was much above the average ratio of the previous year. Investment in wholesale trade contributed about 50 p.c. of the total accumulation and took place entirely in the stocks of durable goods, offsetting a slight liquidation in non-durable goods; the stock-to-sales ratio for the year was higher than in 1966. About 20 p.c. of the total increase in the investment of business inventories occurred in retail trade, mainly concentrated in durable goods with the exception of stocks of motor vehicle dealers which showed a moderate depletion; there was a small build-up in non-durable lines, with a noticeable accumulation in the stocks of food dealers offsetting a general liquidation in most other categories; the stock-to-sales ratio for the year was lower than in 1966.

Canada's exports of goods and services rose to \$14,600,000,000 in 1967, an increase of 11½ p.c. over 1966; imports of goods and services rose 6 p.c. Thus, the improvement in the deficit on international current account from \$1,200,000,000 to \$500,000,000 (on a national accounts basis) was one of the feature developments of the year. Improvement in the deficit was attributable to an increase in the balance on merchandise trade of \$256,000,000, dramatically reinforced by a contraction of the deficit on non-merchandise trade of \$402,000,000.

Merchandise exports, at \$11,400,000,000, were 10½ p.c. higher than in 1966. Domestic exports showed a gain of \$1,051,000,000 in United States markets, of which \$963,000,000 was in end products, particularly cars and trucks, engines and parts and aircraft engines and parts. A sharp drop in sales of wheat to eastern Europe and Asia, in particular to the Soviet Union and China, was offset by very large increases in exports to Japan, Italy and the Netherlands. Merchandise imports, at \$10,900,000,000, were about 8 p.c. higher than in 1966 and \$752,000,000 of the \$802,000,000 increase was attributable to United States suppliers. Increased imports of automotive products accounted for more than 70 p.c. of the rise and other important items were aircraft with engines and parts, and crude petroleum.

On the service account, receipts rose nearly 17½ p.c. and payments less than 2 p.c. The major factor was the reversal in the net tourist and travel account from a deficit of \$63,000,000 to a surplus of \$427,000,000, only the second surplus since 1950. The remarkable lift of Expo and other Centennial activities along with a small decline in the deficit in freight and shipping transactions offset a drop in gold production available for export, higher official contribution payments, and larger deficits for income, business and other governmental transactions.

The Government Sector.—Total revenue of all governments combined (excluding inter-governmental transfers) rose to \$21,300,000,000 in 1967, an increase of nearly 12 p.c. over 1966. Of this advance of \$2,265,000,000, \$167,000,000 was accounted for by higher revenues of the Canada and Quebec Pension Plans. Total expenditure rose somewhat more (\$2,456,000,000 or 13 p.c.), so that the over-all surplus on a national account basis declined from \$348,000,000 to \$157,000,000.

On the revenue side, direct taxes increased by nearly \$1,000,000,000 or 14 p.c. Personal direct tax, almost all income tax, increased rather more than this, while corporation tax revenue decreased slightly. The proportionately greater income of the provincial governments from these sources was the result of increased abatements to the provinces from the Federal Government. Part of the increase in personal direct taxes at the federal level can be attributed to the doubling of the maximum old age security tax on personal income imposed at the beginning of the year.

In indirect taxes the rise of \$761,000,000 or 9 p.c., went mainly to the provincial and municipal governments, with the Federal Government receiving only one sixth. At the provincial level, larger sales tax revenue accounted for most of the increase; higher rates were levied in Quebec, New Brunswick and Newfoundland and a sales tax was introduced in Manitoba. The only other large gain was in gasoline taxes. The rise in municipal indirect tax revenue resulted from an 11½-p.c. increase in property taxes. The smaller rise in federal indirect tax revenue came mainly from an increase of 1 p.c. in the sales tax rate, partially offset by the abolition of sales tax on production machinery and equipment and drugs during the year.

In expenditures, total outlays on goods and services rose by over \$1,000,000,000, each of the three levels of government increasing its spending by about the same amount. At each level, this was caused mainly by increases in wages and salaries, capital formation having risen more slowly than in the previous year. Transfer payments increased by \$1,300,000,000, with large increases in Old Age Security Fund payments resulting from the lower age limit and the introduction of the guaranteed minimum monthly income supplement to old age security recipients, and in hospital and education grants. Smaller increases occurred in employment benefits and workmen's compensation benefits.

With the inception of the Canada Assistance Plan and higher transfers under taxation agreements, transfers from the Federal Government to the provincial and municipal governments rose by \$330,000,000. Thus, with federal expenditures increasing by nearly 13 p.c. while revenues were rising by 8½ p.c., the federal surplus of \$164,000,000 in 1966 became a deficit of \$256,000,000 in 1967. At the provincial-municipal level, the deficit eased from \$535,000,000 in 1966 to \$473,000,000 in 1967.

Components of Income.—Labour income was more than 9 p.c. higher in 1967 than in 1966, mainly reflecting higher average earnings. Income in the service-producing sector advanced more rapidly than in the goods-producing sector. The 12-p.c. increase in the former, slightly higher than in 1966, accounted for almost three quarters of the increase in total wages and salaries compared with slightly more than half of the 1966 increase. The largest relative gains in wages and salaries were recorded in public utilities (15½ p.c.), service (13 p.c.) and transportation, storage and communication (12 p.c.). Increases in average weekly earnings were greater than in the previous year, offsetting a slightly reduced rate of increase in employment; this trend was common to most components. Government wages and salaries rose by almost 14 p.c.—provincial government payrolls by 20 p.c., municipal government payrolls by 12 p.c. and the Federal Government payroll by 10½ p.c.

In the goods-producing sector, wages and salaries increased by about 6 p.c., compared with 13½ p.c. in 1966. In the primary industries they went up 7 p.c., about the same as in the previous year, the rate of increase being lower in all components except mining where the rate went up despite lower average hours worked and a lower rate of increase in employment. Manufacturing wages and salaries advanced about 6 p.c. compared with 11½ p.c. in 1966; employment showed little change and average hours worked were lower but the increase in average hourly earnings was somewhat greater than in 1966. Wages and salaries in construction were about 4 p.c. higher than in the previous year, compared with increases of almost 25 p.c. in both 1965 and 1966. The slowdown was the result of declines in employment and in average weekly hours worked, although average hourly earnings increased at a slightly faster rate than in 1966.

Net corporation profits declined a further 2½ p.c. in 1967 following a 1-p.c. dip in 1966. These annual levels conceal some fluctuations within the two-year period. Following a rising trend in profits that came to a high point in the first quarter of 1966, three factors influenced the later generally declining movements: (1) the drop in profits in the third quarter of 1966 was reinforced by a number of strikes in the economy; (2) the rail subsidies

that are included in corporation profits were particularly high in the fourth quarter of 1966 and had the effect of bolstering the rise in that quarter; (3) fluctuations in the movements of quarterly capital consumption allowances over the two years influenced movements in net profits.

Net profits in 1967 were lower in the mining industry by 1 p.c., manufacturing by 4 p.c., and wholesale trade by 5 p.c. A 21-p.c. drop in transportation, storage and communication was related to a significant rise in capital consumption allowances, when a tax ruling introduced in the early part of the year permitted telephone companies to claim higher allowances than previously. Profits of the utility group expanded nearly 25 p.c. and retail trade, finance and service industries rose 6 p.c., 7 p.c. and 15 p.c., respectively. Within the manufacturing industry, profit changes in 1967 were varied, there being more declines than gains. The textile, wood, paper, electrical, non-metallic mineral, and chemical categories all experienced marked profit declines; those of the rubber, petroleum and coal, and printing and publishing groups progressed from their 1966 levels; and little change was noted in the food and beverage, and metal industry profits.

Rent, interest and miscellaneous investment income rose by nearly 13 p.c. in 1967 compared with about 9 p.c. in 1966. Government income for all levels combined was higher by \$336,000,000 against a rise of \$142,000,000 in 1966. About 40 p.c. of the increase in government investment income came from higher trading profits of government enterprises. This was mainly at the provincial level, with the trading profits of liquor commissions accounting for about half of the rise.

Accrued net income of farm operators from farm production fell by 23 p.c. from the exceptionally high level of the previous year. Predominant in the decline in value of grain production was a much smaller grain crop than the record crop of 1966; moreover, Canadian Wheat Board profits were considerably reduced, reflecting much lower exports in the third and fourth quarters. Slightly offsetting this movement were advances in livestock production and higher income from other farm products—mainly dairy products where subsidies were a factor, and tobacco. Operating expenses again recorded a moderate increase and contributed further to the decline in net income. Net income of farm operators from farm production, which is reflected in the personal account, declined by nearly 13 p.c. in 1967. The smaller decline in this component resulted from the record high final payments made by the Canadian Wheat Board in the first quarter.

Net income of non-farm unincorporated business rose to \$3,194,000,000, slightly more than 8 p.c. over the 1966 total. Most industries registered gains over 1966. The service industries alone accounted for just under half of the increase, a portion of which was due to Expo, while smaller gains were recorded in retail trade and construction.

Economic Activity in the First Nine Months of 1968

For the first three quarters of 1968, Canada's gross national product was 7.6 p.c. higher than in the same period of 1967, compared with a 6.8-p.c. gain for the full year 1967. In value terms, the advance was 4.4 p.c., well above the 2.8-p.c. increase of the previous year.

Continued buoyance in personal expenditure and intensified demand for new housing and merchandise exports were the salient features of the expansion. Personal outlays increased by 8½ p.c., paced by vigorous demand for durables, especially for new cars. Expenditure on new residential construction jumped by 20 p.c. and more than offset a 3-p.c. decline in outlays for plant and equipment. Merchandise exports rose by 19 p.c., almost twice the rate of advance of 1967; imports also increased but less rapidly, with the result that the merchandise surplus advanced to over \$1,000,000,000. Government expenditures also contributed to total demand but the 7-p.c. increase was appreciably lower than in the previous year; particularly notable was the slowdown at the federal level.

Among components of income, net corporation profits increased by 14½ p.c. following declines in both 1966 and 1967; gross profits rose by 8½ p.c. after only a slight advance in the previous year. Labour income increased by 8 p.c., slightly down from the 1967 rate. Employment increased by just over 1½ p.c. in the first nine months, about half as rapidly as in the previous year; the growth in the labour force also slowed but by a lesser amount, while the unemployment rate rose to 5.0 p.c. compared with 4.1 p.c. for 1967.

1.—Gross National Product in Current and Constant (1949) Dollars, 1938-67

NOTE.—Comparable figures for 1927-37 are given in the 1965 Year Book, p. 1009.

Year	Millions of Current Dollars	Millions of Constant (1949) Dollars	Year	Millions of Current Dollars	Millions of Constant (1949) Dollars
1938.....	5,278	8,871	1953.....	25,020	20,794
1939.....	5,636	9,536	1954.....	24,871	20,186
1940.....	6,743	10,911	1955.....	27,132	21,920
1941.....	8,328	12,486	1956.....	30,585	23,811
1942.....	10,327	14,816	1957.....	31,909	24,117
1943.....	11,088	15,357	1958.....	32,894	24,397
1944.....	11,850	15,927	1959.....	34,915	25,242
1945.....	11,835	15,552	1960.....	36,287	25,849
1946.....	11,860	15,251	1961.....	37,471	26,515
1947.....	13,165	15,446	1962.....	40,575	28,287
1948.....	15,120	15,735	1963.....	43,424	29,740
1949.....	16,343	16,343	1964.....	47,393	31,650
1950.....	18,006	17,471	1965 ^r	52,203	33,834
1951.....	21,170	18,547	1966 ^r	58,120	36,028
1952.....	23,995	20,027	1967.....	62,068	37,038

2.—National Income and Gross National Product, by Component, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965 ^r	1966 ^r	1967
Wages, salaries and supplementary labour income.....	21,547	23,433	26,179	29,661	32,389
Military pay and allowances.....	598	583	587	621	704
Corporation profits before taxes ¹	3,574	4,066	4,419	4,348	4,265
Rent, interest and miscellaneous investment income.....	3,078	3,262	3,537	3,844	4,339
Accrued net income of farm operators from farm production ²	1,721	1,464	1,645	2,204	1,698
Net income of non-farm unincorporated business ³	2,551	2,720	2,877	2,949	3,194
Inventory valuation adjustment.....	-200	-131	-325	-321	-291
Net National Income at Factor Cost.....	32,869	35,397	38,919	43,306	46,298
Indirect taxes less subsidies.....	5,600	6,372	7,238	7,950	8,705
Capital consumption allowances and miscellaneous valuation adjustments.....	5,198	5,600	6,110	6,623	7,000
Residual error of estimate.....	-243	24	-64	241	65
Gross National Product at Market Prices.....	43,424	47,393	52,203	58,120	62,068

¹ Excludes dividends paid to non-residents.
net income of independent professional practitioners.

² Includes changes in farm inventories.

³ Includes

3.—Gross National Expenditure, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965*	1966*	1967
Personal expenditure on consumer goods and services.....	27,487	29,666	32,061	34,848	37,714
Government expenditure on goods and services.....	8,075	8,654	9,614	11,286	12,377
Current expenditure.....	6,273	6,813	7,400	8,689	9,568
Gross fixed capital formation.....	1,802	1,841	2,214	2,597	2,809
Business gross fixed capital formation.....	7,591	9,103	10,651	12,493	12,365
New residential construction.....	1,707	2,021	2,184	2,171	2,337
New non-residential construction.....	2,885	3,358	4,084	4,850	4,670
New machinery and equipment.....	3,049	3,724	4,503	6,472	5,358
Value of physical change in inventories.....	535	386	948	940	225
Non-farm business inventories.....	244	516	905	777	189
Farm inventories and grain in commercial channels..	291	—130	43	163	36
Exports of goods and services.....	9,111	10,578	11,265	13,073	14,608
Deduct: Imports of goods and services.....	—9,618	—10,970	—12,400	—14,280	—15,157
Residual error of estimate.....	243	—24	64	—240	—64
Gross National Expenditure at Market Prices..	43,424	47,393	52,203	58,120	62,068

4.—Gross National Expenditure in Constant (1949) Dollars, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965*	1966*	1967
Personal expenditure on consumer goods and services.....	20,235	21,506	22,798	23,954	25,094
Government expenditure on goods and services.....	4,588	4,763	5,039	5,582	5,765
Current expenditure.....	3,317	3,478	3,644	4,038	4,175
Gross fixed capital formation.....	1,279	1,295	1,410	1,659	1,604
Adjusting entry.....	—8	—10	—16	—15	—14
Business gross fixed capital formation ..	4,615	5,305	5,947	6,717	6,498
New residential construction.....	1,035	1,162	1,164	1,123	1,127
New non-residential construction.....	1,698	1,927	2,176	2,488	2,281
New machinery and equipment.....	1,882	2,215	2,607	3,104	3,094
Adjusting entry.....	—	1	—	2	—4
Value of physical change in inventories.....	464	322	854	811	158
Non-farm business inventories.....	193	392	706	586	131
Farm inventories and grain in commercial channels.....	325	—153	77	193	14
Adjusting entry.....	—54	88	71	27	13
Exports of goods and services.....	7,118	8,100	8,508	9,570	10,509
Deduct: Imports of goods and services.....	—7,188	—8,102	—9,118	—10,296	—10,796
Residual error of estimate.....	165	—16	41	—148	—38
Adjusting entry.....	—257	—228	—235	—162	—152
Gross National Expenditure in Constant (1949) Dollars.....	29,740	31,650	33,834	36,028	37,038
Index of gross national expenditure (1949=100).....	182.0	193.6	207.0	220.4	226.6

5.—Year-to-Year Percentage Change in Gross National Expenditure, 1963-67

Item	1963	1964 ^r	1965 ^r	1966 ^r	1967
	p.c.	p.c.	p.c.	p.c.	p.c.
Personal Expenditure on Consumer Goods and Services—					
Value.....	6.0	7.9	8.1	8.7	8.2
Volume.....	4.5	6.3	6.0	5.1	4.8
Price.....	1.4	1.6	2.0	3.4	3.3
Government Expenditure on Goods and Services—					
Value.....	4.6	7.2	11.1	17.4	9.7
Volume.....	0.5	3.9	5.8	10.8	3.3
Price.....	4.1	3.2	5.0	5.9	6.2
Current Expenditure—					
Value.....	5.2	8.6	8.6	17.4	10.1
Volume.....	1.4	4.8	4.7	10.8	3.4
Price.....	3.8	3.6	3.7	6.0	6.5
Gross Fixed Capital Formation—					
Value.....	2.7	2.2	20.3	17.3	8.2
Volume.....	-1.6	1.3	8.8	10.6	2.9
Price.....	4.3	0.9	10.4	6.1	5.1
Business Gross Fixed Capital Formation—					
Value.....	9.1	19.9	17.0	17.3	-1.0
Volume.....	5.8	14.9	12.1	12.9	-3.3
Price.....	3.1	4.4	4.3	3.8	2.3
New Residential Construction—					
Value.....	8.2	18.4	5.1	2.2	7.6
Volume.....	4.7	12.3	0.1	-3.5	0.4
Price.....	3.4	5.5	5.0	6.0	7.2
New Non-residential Construction—					
Value.....	7.5	18.4	19.8	20.5	-3.7
Volume.....	4.0	13.5	12.9	14.4	-8.4
Price.....	3.4	4.4	6.1	5.4	5.0
New Machinery and Equipment—					
Value.....	11.1	22.1	20.9	21.5	-2.1
Volume.....	8.3	17.7	17.7	19.0	-0.3
Price.....	2.6	3.8	2.7	2.1	-1.8
Exports of Goods and Services—					
Value.....	10.3	16.1	6.5	16.0	11.7
Volume.....	9.0	13.8	5.1	12.3	9.9
Price.....	1.2	2.0	1.4	3.2	1.7
Imports of Goods and Services—					
Value.....	5.9	14.1	13.0	15.2	6.1
Volume.....	2.9	12.7	12.5	12.9	4.9
Price.....	2.9	1.2	0.4	2.0	1.2
Gross National Expenditure at Market Prices—					
Value.....	7.0	9.1	10.1	11.3	6.8
Volume.....	5.1	6.4	6.9	6.5	2.8
Price.....	1.8	2.6	3.0	4.5	3.9

6.—Personal Income, by Source and by Province, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965 ^r	1966 ^r	1967
Source					
Wages, salaries and supplementary labour income.....	21,547	23,433	26,179	29,661	32,389
Deduct: Employer and employee contributions to social insurance and government pension funds.....	-852	-912	-1,027	-1,843	-2,031
Military pay and allowances.....	598	583	587	621	704
Net income received by farm operators from farm production	1,582	1,353	1,689	2,048	1,785
Net income of non-farm unincorporated business.....	2,551	2,720	2,877	2,949	3,194
Interest, dividends and net rental income of persons.....	3,616	3,799	4,139	4,536	4,894
Transfer Payments (excluding interest)—					
From governments.....	3,848	4,133	4,574	5,047	6,223
Charitable contributions from corporations.....	44	44	44	44	44
Totals, Personal Income.....	32,934	35,153	39,062	43,063	47,202

6.—Personal Income, by Source and by Province, 1963-67—concluded

Item	1963	1964	1965 [†]	1966 [†]	1967
Province					
Newfoundland.....	484	523	583	654	712
Prince Edward Island.....	118	132	146	151	167
Nova Scotia.....	981	1,041	1,144	1,220	1,355
New Brunswick.....	708	777	875	946	1,028
Quebec.....	8,254	8,980	9,979	10,945	12,141
Ontario.....	13,099	14,057	15,444	16,986	18,758
Manitoba.....	1,599	1,725	1,858	1,997	2,231
Saskatchewan.....	1,742	1,587	1,875	2,144	2,091
Alberta.....	2,455	2,571	2,903	3,278	3,535
British Columbia.....	3,366	3,628	4,110	4,589	5,022
Yukon and Northwest Territories.....	53	57	62	72	79
Foreign countries ¹	75	75	83	81	83

¹ Income of Canadians temporarily abroad including pay and allowances of Canadian Armed Forces abroad.

7.—Disposition of Personal Income, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965 [†]	1966 [†]	1967
Personal Direct Taxes—					
Income taxes.....	2,487	2,957	3,355	3,903	4,904
Succession duties and estate taxes.....	171	179	212	224	215
Miscellaneous taxes.....	258	292	346	357	374
Personal expenditure on consumer goods and services.....	27,487	29,666	32,061	34,848	37,714
Personal net saving.....	2,531	2,059	3,088	3,731	3,995
Totals, Personal Income.....	32,934	35,153	39,062	43,063	47,202

8.—Personal Expenditure on Consumer Goods and Services, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964	1965 [†]	1966 [†]	1967
Food.....	6,414	6,724	7,114	7,620	8,073
Tobacco and alcoholic beverages.....	1,840	1,911	2,079	2,225	2,431
Clothing and personal furnishings.....	2,643	2,803	2,972	3,141	3,365
Shelter.....	4,323	4,595	4,907	5,323	5,790
Household operation.....	3,352	3,576	3,836	4,170	4,522
Transportation.....	3,430	3,730	4,120	4,262	4,549
Personal and medical care and death expenses.....	2,396	2,613	2,841	3,078	3,381
Miscellaneous.....	3,089	3,714	4,192	5,029	5,603
Totals.....	27,487	29,666	32,061	34,848	37,714
Durable goods.....	3,246	3,592	4,001	4,169	4,365
Non-durable goods.....	13,518	14,389	15,438	16,930	18,488
Services.....	10,723	11,685	12,622	13,749	14,861

9.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964 ^r	1965 ^r	1966 ^r	1967
Revenue					
Direct Taxes: Persons—					
Income taxes.....	2,487	2,957	3,355	3,903	4,904
Succession duties and estate taxes.....	171	179	212	224	215
Miscellaneous taxes.....	258	292	346	357	374
Direct taxes: corporations.....	1,827	2,053	2,225	2,252	2,208
Withholding taxes.....	127	140	168	203	218
Indirect taxes.....	5,911	6,695	7,564	8,466	9,227
Investment Income—					
Interest.....	605	648	730	865	1,055
Profits of government business enterprises.....	790	878	941	948	1,094
Employer and employee contributions to social insurance and government pension funds.....	852	912	1,027	1,843	2,031
Totals, Revenue	13,028	14,754	16,568	19,061	21,326
Expenditure					
Purchases of goods and services.....	8,075	8,654	9,614	11,286	12,377
Transfer Payments—					
Interest.....	1,423	1,526	1,645	1,805	1,982
Other.....	3,848	4,133	4,574	5,047	6,223
Capital assistance.....	61	82	84	59	65
Subsidies.....	311	323	326	516	522
Surplus or deficit (on transactions relating to the national accounts).....	-690	36	325	348	157
Totals, Expenditure	13,028	14,754	16,568	19,061	21,326

10.—Analysis of Corporation Profits, 1963-67

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127, and for later years in succeeding editions.

(Millions of dollars)

Item	1963	1964 ^r	1965 ^r	1966 ^r	1967
Corporation profits before taxes.....	3,574	4,066	4,419	4,348	4,265
Dividends paid to non-residents.....	614	753	780	797	755
Corporation profits including dividends paid to non-residents.....	4,188	4,819	5,199	5,145	5,020
Deduct: Corporation income tax liabilities.....	-1,827	-2,053	-2,225	-2,252	-2,208
Excess of tax liabilities over collections.....	52	-44	-44	-47	-209
Tax collections.....	1,775	2,097	2,269	2,289	2,417
Corporation profits after taxes.....	2,361	2,766	2,974	2,893	2,812
Deduct: Dividends paid to non-residents.....	-614	-753	-780	-797	-755
Corporation profits retained in Canada.....	1,747	2,013	2,194	2,096	2,057
Deduct: Dividends paid to Canadian persons.....	-637	-677	-796	-903	-940
Deduct: Charitable contributions from corporations.....	-44	-44	-44	-44	-44
Undistributed Corporation Profits	1,066	1,292	1,354	1,149	1,073

11.—Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1963-67

(Millions of dollars)

Industry	1963	1964	1965	1966*	1967
Agriculture, forestry, fishing and trapping.....	18	19	18	17	15
Mining, quarrying and oil wells.....	453	604	602	570	566
Manufacturing.....	2,045	2,223	2,371	2,302	2,214
Construction.....	55	60	78	74	65
Transportation.....	205	284	306	308	235
Storage.....	15	16	16	19	15
Communication.....	164	190	214	226	187
Electric power, gas and water utilities.....	75	74	92	94	117
Wholesale trade.....	292	345	378	419	398
Retail trade.....	257	272	312	297	316
Finance, insurance and real estate.....	499	607	660	643	689
Service.....	105	125	152	176	203
Totals.....	4,188	4,819	5,199	5,145	5,020

Section 2.—Industry Production Trends

Indexes of Real Domestic Product

The Dominion Bureau of Statistics in 1968 released a revised set of production data pertaining to the entire spectrum of Canadian industries. These data, in the form of volume of production indexes, are measures of value added for each industry expressed in the dollars of a base year. Technically, they are termed "indexes of real domestic product (RDP) at factor cost originating by industry".* The value added, or RDP, volume indexes can be regarded as an extension of the index of industrial production† to encompass the remainder of the economy. Concepts and basic methods used to construct both indexes are the same. Thus, industry production index coverage is extended from mining, manufacturing and electric power and gas utilities, for which volume indexes have been published since the 1920s, to include all other major industrial divisions. However, only the index of industrial production is published on a monthly basis; for the remaining industries only quarterly and annual indexes are currently being published. The RDP indexes can also be regarded as an elaboration of the supply side of the national income accounts.*

In measuring the output of a single product such as steel, it is normal to think in terms of tons of steel when the question of quantity arises. When measuring the combined production of steel and natural gas, there is an obvious need for a common denominator and it is appropriate to use the average unit prices of a certain time period (chosen as the base) to value the quantities produced before adding them together. The resultant quantity, volume or real output measure can be subsequently left in its constant or base period dollar form or it can be expressed in index number form. The latter is accomplished by dividing the constant dollar aggregate of the current period by the dollar aggregate for the base period and multiplying by 100. In constructing a quantity index for a combination of industries where the output of one industry becomes the input of another, the portion double-counted must be eliminated. This is accomplished by revaluing both intermediate input (materials, fuel, etc.) and total output in terms of the dollars of a common base year and subtracting the constant dollar value of the former from the latter to yield a constant dollar value added aggregate.* This aggregate is the quantity of volume measure represented by the indexes presented herein.

* *Indexes of Real Domestic Product by Industry, 1961 Base*, DBS Occasional Paper (Catalogue No. 61-506). For a detailed explanation of concepts, methods and limitations, see *Indexes of Real Domestic Product by Industry of Origin, 1935-61* (Catalogue No. 61-505). Current data on a quarterly or monthly basis are published in DBS monthly *Index of Industrial Production* (Catalogue No. 61-005).

† See *Revised Index of Industrial Production, 1935-57* (Catalogue No. 61-502) and the current monthly publication *Index of Industrial Production* (Catalogue No. 61-005).

The annual indexes are well suited for studies of production trends, growth rates and inter-industry comparisons, but the quarterly indexes provide a much better tool for the study of the cyclical behaviour of industries, short-term changes in production and, in fact, for most types of current analysis. Statistics computed for less than annual intervals, however, are frequently subject to strong seasonal influences, and variations in the number of working days during a quarter may cause differences in the levels of output between two quarters which otherwise would not exist. Accordingly, the quarterly real output indexes have been adjusted for both seasonal and calendar variation.

Factors Underlying Industrial Output Trends, 1946-67.—The early postwar period was marked by several major expansions. The first was based on satisfying the backlog of war-deferred investment and consumer demand and on supplying the needs of the war-devastated countries, especially for various materials. This was followed by some slowing down in production but the requirements of defence-supporting industries after the outbreak of the Korean hostilities and stockpiling requirements at home and abroad introduced a second expansionary period. The third was the investment boom of the mid-1950s during which output reached a new high level. These strong demand influences combined to make most of this period one of fairly rapid and sustained growth. During the late 1950s the rate of increase diminished, as external sources of supply for many commodities multiplied and as competition intensified. At the same time, there was an absence of strong stimulants to domestic demand, such as the deferred demand and the population growth of the preceding period. During the 1960s, however, the first waves of the postwar generation exercised a growing influence on the demand for goods and services and this proved to be one of the major stimuli to the current expansion which began early in 1961 and continued into 1966. Other notable features of the expansion were: the relatively slow growth of imports compared with previous expansion periods, particularly after the stabilization of the Canadian dollar and other government measures undertaken in mid-1962 (although some acceleration took place in imports of machinery and equipment during 1964 and 1965 in response to the increased investment in construction and plant and equipment); the increase in exports, particularly during the latter part of 1963 and early 1964 when large amounts of wheat were sold abroad; the above-average output of the mining and agriculture industries since 1962; and the substantial gains in the production of the iron and steel and motor vehicle and parts industries throughout most of the period.

Along with the increases in total final demand, there were shifts in the composition of demand, which affected the output of the various industries. Imports retained roughly the same relative share of the gross national product but the share of exports declined from 27.1 p.c. in 1946 to 23.5 p.c. in 1967, an indication of the growing importance of the domestic market as an outlet for the products of Canadian industry. Government expenditure and business gross fixed capital formation made considerable relative gains but personal expenditure on goods and services as a percentage of total expenditure declined from 67.8 p.c. in 1946 to 60.8 p.c. in 1967.

Even more remarkable than some of the demand-induced changes were the striking changes brought about by the technological discoveries and innovations that transformed whole production processes and opened up previously unknown areas in the fields of manufacturing, transportation and communication. Newer industries, such as air transport, assumed major importance in a comparatively short time; entirely new industries, such as gas pipelines, appeared; and a profusion of new products were created, such as the petrochemicals of the chemicals industry and the television and other electronic products of the telecommunication equipment industry. As was to be expected, the industries in a position to benefit from such innovations were among the most rapidly expanding in the economy, although the impact of the expansion spread through the entire economic system. The changes in production and demand also influenced the level of employment in the various industries; there was a considerable shift in employment during the postwar period from the goods-producing to the service-producing industries and most of the loss in the former took place in agriculture.

12.—Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin, 1952-67

(1961=100)

Industry	1952	1953	1954	1955	1956	1957	1958	1959
Agriculture.....	132.6	121.2	93.1	114.9	122.0	102.6	113.8	110.2
Forestry.....	90.6	86.4	89.7	94.8	100.1	91.1	80.7	91.2
Fishing and trapping.....	94.2	96.1	104.2	98.0	103.5	97.9	109.3	98.1
Mines (incl. milling), quarries and oil wells.....	46.5	50.6	56.1	66.4	77.1	84.6	86.0	97.3
Manufacturing.....	71.5	76.6	74.9	82.2	89.9	89.7	88.0	94.5
Construction.....	64.1	71.9	73.7	81.9	92.2	100.2	103.7	98.7
Electric power, gas and water utilities.....	44.5	46.7	51.1	57.9	64.6	69.5	76.3	86.6
Transportation, storage, communication.....	69.6	70.5	68.8	78.1	87.1	87.4	84.4	91.2
Trade.....	68.0	72.6	73.4	81.8	89.2	89.2	91.3	97.4
Finance, insurance and real estate.....	1	1	1	1	1	1	1	1
Community, business and personal service.....	71.7	74.4	75.8	77.7	82.4	85.0	88.2	93.0
Public administration and defence.....	1	1	1	1	1	1	1	1
Real Domestic Product.....	72.5	75.5	74.3	82.1	89.1	89.5	91.0	95.7
	1960	1961	1962	1963	1964	1965	1966	1967
Agriculture.....	115.3	100.0	121.2	135.8	122.3	128.3	145.4	124.7
Forestry.....	104.4	100.0	104.1	110.2	114.3	117.7	124.8	129.9
Fishing and trapping.....	95.1	100.0	110.6	104.9	105.3	97.6	112.9	104.1
Mines (incl. milling), quarries and oil wells.....	97.4	100.0	104.8	110.6	124.9	131.6	136.5	145.2
Manufacturing.....	96.1	100.0	110.5	118.0	129.2	141.0	151.2	151.7
Construction.....	97.0	100.0	104.6	105.9	117.4	133.7	141.7	142.4
Electric power, gas and water utilities.....	94.4	100.0	107.1	112.5	123.3	134.0	147.8	161.3
Transportation, storage, communication.....	93.9	100.0	104.1	111.1	120.2	127.2	136.4	144.3
Trade.....	97.6	100.0	105.6	109.6	116.0	124.3	129.8	135.3
Finance, insurance and real estate.....	1	100.0	104.0	108.1	112.9	117.2	120.4	125.7
Community, business and personal service.....	96.7	100.0	105.4	109.8	117.0	125.7	132.5	138.8
Public administration and defence.....	1	100.0	103.4	104.0	105.2	106.2	109.3	116.8
Real Domestic Product.....	98.0	100.0	106.9	112.3	119.5	127.8	135.5	139.1

¹ No data are available prior to 1961 on a 1961 base due to a break in historical continuity resulting from the implementation of the 1960 standard industrial classification and the 1961 weight and reference base for the indexes.

Industrial Expansion, 1946-67.—Although all the major industry groups expanded during 1946-67, development was not uniform throughout the period. For example, there has been a marked and fairly general acceleration in output growth in Canada during the 1960s. Despite some deceleration in output during 1966 and 1967, total real domestic product grew at a rate of 5.9 p.c. from 1961, the beginning of the current cyclical expansion. In contrast, the average rate of growth in real domestic product for the 1946-61 period was 4.7 p.c. per annum. Three important types of factors affecting the expansionary paths of industries were in evidence at some point during the period. The first may be described as some special factor at work in a particular industry, the effects of which would be most noticeable in that industry—for example, the demand for uranium which had an important influence on the mining industry during the latter half of the 1950s, the opening up of new mineral resources such as the iron ore mines in Quebec-Labrador, and certain technological innovations such as the development of synthetic materials or television. The second type of factor is much more general in its effects and in its causes. Such factors as increased demand for consumer goods resulting from a rising standard of living and a growing population, shifts in world trading patterns or shortages causing increased demand for export goods, the surge of investment activity associated with replacement cycles, as well as attempts to broaden the base of economic activity through investment in research, social overhead capital, education, improved management

and marketing techniques, or a more efficient production process (or a confluence of all these factors) appear to lie at the root of such postwar expansions as the investment boom of the mid-1950s or the rapid expansion in production since 1961. The third type of factor would be some unique and far-reaching event, of which the Korean War might serve as a conspicuous example.

All three factors, jointly or in turn, have reacted on the various industries to result in the upswings in aggregate production. The percentage growth of each of the main industrial groups in the 1946-66 period was as follows:—

<i>Industry</i>	<i>Growth</i>	<i>Industry</i>	<i>Growth</i>
	p.c.		p.c.
Agriculture.....	1.7	Transportation, storage and communication.....	4.7
Forestry.....	2.3	Trade.....	4.6
Fishing and trapping.....	1.1	Finance, insurance and real estate.....	1
Mines (incl. milling), quarries and oil wells.....	8.7	Community, business and personal service.....	4.2
Manufacturing.....	5.1	Public administration and defence....	1
Construction.....	6.2		
Electric power, gas and water utilities	9.3	REAL DOMESTIC PRODUCT.....	4.7

¹ For these industries the 1946-61 and the 1961-67 periods are not considered sufficiently comparable to have been linked following conversion to the 1960 standard industrial classification and the 1961 weight and reference base—see *Indexes of Real Domestic Product by Industry, 1961 Base*, Appendix I (Catalogue No. 61-506). The 1961-67 growth rate for Finance, insurance and real estate was 3.9 p.c. and for Public administration and defence 2.2 p.c.; the 1946-61 rates were 5.0 p.c. and 4.6 p.c., respectively.

Foremost in growth was the electric power and gas utilities industry, followed by the mining and construction industries. All three were strongly affected by technological advances, new discoveries and a fairly well sustained demand for their products. The demand in mining frequently came from abroad, resulting in relatively high export sales and providing incentive for the opening up and developing of new mineral resource areas. Some slackening in construction activity was evident following the unusually high levels reached during the mid-1950s but since 1963 the swing has again been upward, although there was some flattening in the latter part of 1966.

Although over the period as a whole most of the other industry divisions (except agriculture, forestry and fishing and trapping) expanded at roughly the same average rate of between about 4 p.c. and 5 p.c., the manufacturing, trade, and transportation, storage and communication industry divisions, which together accounted for almost one half of the total output, also showed strikingly similar cyclical patterns. Within manufacturing it was the durables component that expanded particularly rapidly during the cyclical upturns and that benefited from the need for machinery and equipment in the periods of heavy investment and from increased consumer demand for such products as motor vehicles and electrical appliances during the current expansion. Non-durables maintained a fairly steady rate of expansion for most of the postwar period, largely in response to increased population and demand for industrial materials. A similar pattern was observable in trade, with retail trade exhibiting a relatively smooth expansionary trend.

The community, recreation, business and personal service industry division was relatively insensitive both to cyclical and irregular influences but, along with some other steadily expanding industries such as finance, insurance and real estate, non-durables and retail trade, it helped to sustain aggregate production and growth during periods of contraction and expansion. Although this division as a whole showed a less-than-average rate of growth for the 1946-67 period, some of its components, such as business services, education and hospitals and restaurants, hotels and motels, were among the most rapidly expanding

in the economy. During the 1960s, this resulted in a marked acceleration of the rate of expansion of the groups as a whole, i.e., from 3.8 p.c. in 1946-61 to 5.8 p.c. in 1961-67.

The rates of growth in the forestry, agriculture, and fishing and trapping divisions were below average and were subject to pronounced irregular fluctuations in output—forestry because of the nature of its production processes and also, to some extent, because of its sensitivity to changes in world demand and price; agriculture because of marked year-to-year differences in output more often caused by weather conditions and similar factors than by changes in prices and demand conditions; and fisheries because of its dependence on the vagaries of nature.

Production of Goods-Producing Industries

The data contained in the tables under this heading are published in the DBS report *Survey of Production*.^{*} The scope of the survey of production is limited to industries chiefly engaged in the production of goods and it measures production in current dollars. This is in contrast to the real domestic product series (p. 1098) which encompasses all industries and measures production in terms of the dollars of a base year.

Tables 13 and 14 give "census value added" production data, classified by province and industry, respectively. Census value added is derived by deducting the cost of materials from the gross value (exclusive of excise and other sales taxes) of shipments (adjusted for change in inventory of finished goods and goods-in-process) or revenue. The figures include interim classification and valuation changes in mining, manufacturing and forestry brought about by the adoption of the 1960 standard industrial classification of establishments. However, the three industry aggregates continue to consist of census value added accruing from their primary activity only.^{*} Standard industrial classification changes have not yet been implemented for other industries.

^{*}DBS Catalogue No. 61-202. See Appendix of the 1966 issue for census value added in mining, manufacturing and forestry on an all-activities basis.

13.—Census Value Added for Goods-Producing Industries, by Province, 1963-66

Province or Territory	1963		1964		1965		1966	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Newfoundland ¹	281,377	1.3	320,347	1.4	333,731	1.3	419,884	1.5
Prince Edward Island.....	47,008	0.2	55,384	0.2	65,098	0.3	70,026	0.2
Nova Scotia.....	403,287	1.9	443,801	1.9	490,558	1.9	547,105	1.9
New Brunswick.....	312,667	1.5	383,886	1.7	441,148	1.7	471,457	1.6
Quebec.....	5,286,682	24.6	5,882,318	25.3	6,460,685	25.0	7,093,604	24.4
Ontario.....	8,947,543	41.7	9,759,020	41.9	10,854,478	42.0	12,094,712	41.7
Manitoba.....	836,199	3.9	908,782	3.9	962,383	3.7	1,048,952	3.6
Saskatchewan.....	1,449,785	6.7	1,251,165	5.4	1,416,847	5.5	1,788,924	6.2
Alberta.....	1,896,650	8.8	2,016,116	8.7	2,212,089	8.6	2,577,746	8.9
British Columbia ²	1,993,914	9.3	2,218,906	9.5	2,531,027	9.8	2,846,581	9.8
Yukon and Northwest Territories ²	28,058	0.1	30,668	0.1	58,896	0.2	64,698	0.2
Canada.....	21,483,173	100.0	23,270,394	100.0	25,862,939	100.0	29,023,690	100.0

¹ Excludes agriculture with British Columbia.

² Construction figures for the Yukon and Northwest Territories are included

14.—Census Value Added for Goods-Producing Industries, by Province and Industry, 1966

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	—	—	25,078	35.8	35,970	6.6	36,391	7.7
Forestry.....	23,299	5.5	—	—	7,310	1.3	36,120	7.7
Fisheries.....	26,575	6.3	6,504	9.3	49,456	9.0	11,198	2.4
Trapping.....	78	—	2	—	171	—	250	—
Mining.....	117,462	28.0	10	—	53,912	9.9	31,523	6.7
Electric power.....	23,370	5.6	3,409	4.9	33,402	6.1	32,041	6.8
Manufactures.....	93,043	22.2	14,480	20.7	246,702	45.1	211,295	44.8
Construction.....	136,057	32.4	20,543	29.3	120,182	22.0	112,638	23.9
Totals.....	419,884¹	100.0¹	70,026	100.0	547,105	100.0	471,457	100.0
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	308,420	4.4	763,343	6.3	292,143	27.8	991,468	55.4
Forestry.....	172,864	2.4	116,407	1.0	3,793	0.4	973	—
Fisheries.....	7,536	0.1	5,995	0.1	4,788	0.5	1,706	0.1
Trapping.....	2,066	—	3,983	—	2,223	0.2	1,505	0.1
Mining.....	458,973	6.5	499,936	4.1	97,435	9.3	307,121	17.2
Electric power.....	336,386	4.7	401,325	3.3	54,015	5.1	51,554	2.9
Manufactures.....	4,704,799	66.3	8,648,180	71.5	402,954	38.4	154,534	8.6
Construction.....	1,102,560	15.6	1,655,543	13.7	191,601	18.3	280,063	15.7
Totals.....	7,093,604	100.0	12,094,712	100.0	1,048,952	100.0	1,788,924	100.0
	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	636,235	24.7	134,385	4.7	—	—	3,223,433	11.1
Forestry.....	7,211	0.3	305,030	10.7	15	—	673,033	2.3
Fisheries.....	844	—	60,693	2.1	792	1.2	176,088	0.6
Trapping.....	1,776	0.1	777	—	911	1.4	13,741	0.1
Mining.....	772,079	29.9	214,372	7.6	56,780	87.8	2,609,603	9.0
Electric power.....	74,231	2.9	117,826	4.2	4,711	7.3	1,132,370	3.9
Manufactures.....	527,197	20.4	1,347,065	47.3	1,489	2.3	16,351,740	56.3
Construction.....	558,172	21.7	666,324 ²	23.4 ²	—	—	4,843,683	16.7
Totals.....	2,577,746	100.0	2,846,581	100.0	64,698	100.0	29,023,690	100.0

¹ Excludes agriculture.² Includes the Yukon and Northwest Territories.³ Included with British Columbia.

Section 3.—Aggregate Productivity Trends

Increasing interest in questions of economic growth, cost-structure and international competitiveness, and in the relationships between output, employment, earnings and prices has focused attention on productivity as a framework within which such problems can usefully be discussed. Recognizing this interest, the Dominion Bureau of Statistics now publishes annual indexes of output per person employed and per man-hour in Canada covering the commercial industries as a whole, with separate detail for agriculture and the commercial non-agricultural industries, manufacturing and the residual commercial non-manufacturing industries. Similar indexes are also published for the total and non-agricultural goods-producing industries, and the commercial service-producing industries of the same aggregate.*

* See DBS Reference Paper *Indexes of Output per Person Employed and per Man-Hour in Canada, Commercial Non-agricultural Industries, 1947-63* (Catalogue No. 14-501) and *Aggregate Productivity Trends 1946-68* (Catalogue No. 14-201).

Although these measures relate output to a single input only, namely labour time, they do not measure the exclusive contribution of labour to output. Changes in indexes of output per unit of labour input reflect the combined influence of a number of separate but interrelated factors such as the amount and quality of capital equipment, the extent of utilization of available capacity, managerial efficiency and the impact of technological progress, as well as the skill and effort of the work force.

Sources of Data.—The output components of the various indexes of output per unit of labour input referred to here are the historical indexes of "real domestic product (RDP) by industry", described in Section 2, p. 1096. These indexes, which were developed within the conceptual framework of the national accounts and which measure in constant dollar terms the unduplicated contribution of each component industry to total output, are considered basically suitable for productivity measurement when matched with the corresponding input measures.

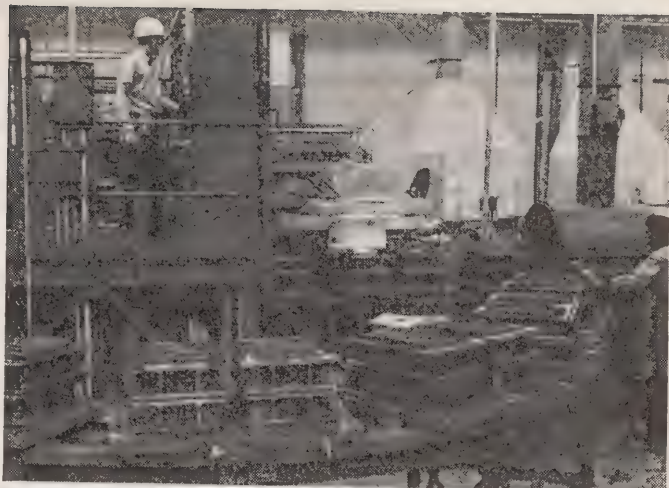
The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys, and these were supplemented by data from such sources as the annual censuses of manufactures and mining and the decennial census of population. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in their selection, adaptation and combination into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fishing and trapping, while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from adjusted employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were derived mainly from the labour force survey. The estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data, except in the case of manufacturing, where estimates of man-hours paid from the census of manufactures were adjusted to the man-hours worked concept.

Growth Rates.—Output per person employed in the commercial non-agricultural industries grew at an average annual rate of 2.7 p.c. between 1946 and 1968. Because of the decline in average hours worked per person, this was a lower rate of growth than that of output per man-hour which, during the same period, increased by 3.3 p.c. per annum. Corresponding figures for manufacturing were 3.7 p.c. and 4.0 p.c. and those for the residual non-manufacturing industries of the commercial non-agricultural sector were 2.3 p.c. and 2.9 p.c., respectively.

In agriculture, the average annual rates of growth of output per person employed and per man-hour between 1946 and 1968 were 5.4 p.c. and 5.7 p.c., respectively. However, in view of the difficulties of measuring the number and especially the man-hours of persons employed in agriculture, data presented for this industry division should be regarded as approximate. In the commercial industries as a whole, output per person employed increased between 1946 and 1968 at an average annual rate of 3.4 p.c., and output per man-hour increased by 4.1 p.c. per annum. Corresponding figures for the total goods-producing industries were 5.0 p.c. and 5.7 p.c., respectively, per annum; for the non-agricultural goods-producing industries, 4.7 p.c. and 4.6 p.c.; and for the commercial service-producing industries, 1.2 p.c. and 1.9 p.c.

Inter-industry Shift Effects.—In addition to measuring the changes in productivity within the component industries, the aggregate productivity indexes measure the effect of shifts in employment and production between industries having different levels of productivity. One of the most significant such shifts within the commercial industries of Canada

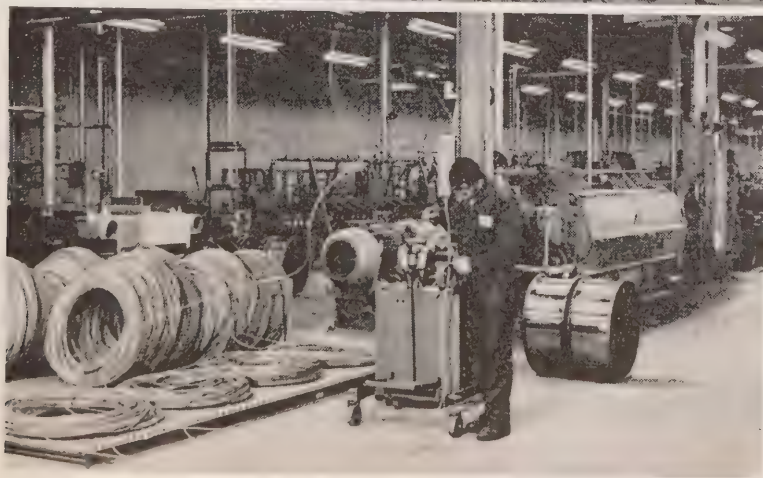
Molten brass flows into moulds in a new \$5,000,000 Brantford, Ont., plant which produces quality brass products using high-speed, automated, electronically controlled equipment.



A new million-ton-a-year potash mill near Lanigan, Sask., officially opened in late 1968, has a work force of about 325.



Wire being formed from copper rod at a new plant at St. Jérôme, Que., described as North America's most modern facility for the production of wire and cable; it will employ about 250 persons.



during the postwar years was from agriculture to the non-agricultural industries, where a higher level of output per unit of labour input prevails. The effect of this shift can be measured in various ways and a number of alternative calculations have been carried out for the 1946-65 annual publication,* all of which confirm, to a greater or lesser extent, that the decline in the relative importance of agriculture made a positive contribution to the total increase in output per person employed in the commercial industries during the postwar period.

* DBS Catalogue No. 14-201.

15. -Indexes of Output per Person Employed and Output per Man-Hour, 1946-68

(1961 = 100)

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
COMMERCIAL INDUSTRIES					
1946.....	51.6	84.5	95.1	61.1	54.2
1947.....	55.0	88.5	97.3	62.2	56.5
1948.....	57.0	90.1	99.1	63.2	57.5
1949.....	58.5	91.4	99.7	64.0	58.7
1950.....	62.7	91.4	97.8	68.6	64.1
1951.....	67.5	93.7	99.5	72.0	67.9
1952.....	72.5	94.6	100.0	76.6	72.5
1953.....	75.5	95.1	100.3	79.4	75.3
1954.....	73.8	94.4	99.3	78.2	74.3
1955.....	82.1	95.7	99.8	85.8	82.3
1956.....	89.5	99.5	103.5	89.9	86.5
1957.....	89.7	101.3	104.1	88.6	86.1
1958.....	91.0	98.4	100.5	92.4	90.5
1959.....	95.9	100.1	102.0	95.8	94.0
1960.....	98.0	99.6	100.8	98.4	97.2
1961.....	100.0	100.0	100.0	100.0	100.0
1962.....	107.3	102.2	101.9	104.9	105.3
1963.....	113.3	104.1	102.9	108.8	110.1
1964.....	120.8	107.8	105.8	112.1	114.1
1965.....	129.6	112.3	109.3	115.4	118.6
1966.....	137.8	116.1	111.7	118.6	123.4
1967.....	140.7	118.2	113.3	119.1	124.2
1968.....	147.1	119.5	113.3	123.1	129.8
Annual trend rate of change..... p.c.	4.8	1.3	0.6	3.4	4.1
GOODS-PRODUCING INDUSTRIES					
1946.....	51.0	103.5	116.3	49.3	43.9
1947.....	54.0	106.3	115.9	50.8	46.6
1948.....	56.8	107.0	116.7	53.1	48.7
1949.....	57.8	107.9	118.8	53.6	49.5
1950.....	62.6	107.0	113.7	58.5	55.0
1951.....	68.6	109.0	115.1	63.0	59.6
1952.....	74.5	108.2	113.9	68.9	65.4
1953.....	77.4	107.6	113.9	72.0	68.0
1954.....	73.9	105.5	111.3	70.0	66.4
1955.....	83.7	105.7	110.5	79.2	75.7
1956.....	91.9	108.5	113.0	84.7	81.3
1957.....	91.0	108.1	111.0	84.2	82.0
1958.....	92.4	102.4	104.5	90.3	88.5
1959.....	96.8	103.1	105.1	93.9	92.1
1960.....	99.0	101.2	102.5	97.8	96.6
1961.....	100.0	100.0	100.0	100.0	100.0
1962.....	109.9	101.3	101.2	108.5	108.6
1963.....	116.8	102.3	101.3	114.1	115.3
1964.....	125.6	105.0	103.3	119.6	121.5
1965.....	136.4	108.2	105.4	126.1	129.4
1966.....	146.7	110.2	106.7	133.1	137.4
1967.....	146.7	110.3	106.3	133.0	138.0
1968.....	154.7	110.0	105.1	140.7	147.1
Annual trend rate of change..... p.c.	5.0	—	-0.6	5.0	5.7

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-68—
continued

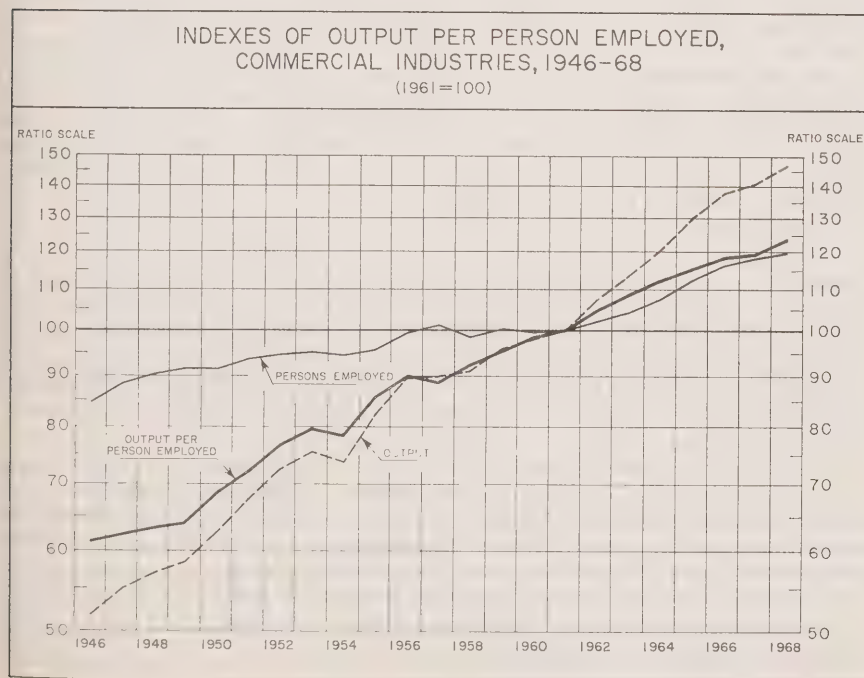
Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
COMMERCIAL SERVICE-PRODUCING INDUSTRIES					
1946.....	51.8	61.3	68.4	84.5	75.8
1947.....	55.8	66.6	73.6	83.7	75.9
1948.....	56.9	69.4	76.5	82.0	74.3
1949.....	59.1	71.3	78.0	82.9	75.7
1950.....	62.2	72.4	77.6	85.9	80.2
1951.....	65.7	75.1	79.6	87.5	82.5
1952.....	69.4	78.0	82.4	89.0	84.3
1953.....	72.4	79.9	83.2	90.6	87.0
1954.....	73.3	81.0	84.1	90.5	87.1
1955.....	79.4	83.4	86.0	95.2	92.4
1956.....	85.6	88.6	91.5	96.6	93.6
1957.....	87.6	93.1	95.6	94.1	91.7
1958.....	88.7	93.5	95.3	94.9	93.0
1959.....	94.1	96.4	98.0	97.6	96.0
1960.....	96.3	97.7	98.7	98.5	97.6
1961.....	100.0	100.0	100.0	100.0	100.0
1962.....	104.5	103.4	102.9	101.1	101.6
1963.....	109.3	106.2	104.8	102.9	104.3
1964.....	115.6	110.9	109.0	104.2	106.0
1965.....	122.0	117.0	114.2	104.2	106.9
1966.....	128.0	122.9	117.8	104.2	108.7
1967.....	134.0	127.3	121.9	105.3	110.0
1968.....	138.7	130.6	123.5	106.2	112.3
Annual trend rate of change..... p.c.	4.5	3.2	2.5	1.2	1.9
AGRICULTURE					
1946.....	95.0	175.9	181.8	54.0	52.2
1947.....	89.2	166.4	166.1	53.6	53.7
1948.....	92.1	162.5	163.5	56.7	56.3
1949.....	86.8	160.8	162.3	54.0	53.5
1950.....	94.9	151.0	148.9	62.9	63.7
1951.....	108.3	139.2	139.8	77.8	77.5
1952.....	132.6	132.2	134.0	100.3	98.9
1953.....	121.2	127.3	131.7	95.2	92.0
1954.....	93.1	130.2	136.1	71.5	68.4
1955.....	114.9	121.5	127.3	94.5	90.3
1956.....	122.0	115.1	121.5	106.0	100.4
1957.....	102.6	110.3	115.0	93.0	89.2
1958.....	113.8	105.6	108.3	107.7	105.1
1959.....	110.2	102.6	104.9	107.4	105.0
1960.....	115.3	100.2	102.1	115.1	112.9
1961.....	100.0	100.0	100.0	100.0	100.0
1962.....	121.2	96.9	96.3	125.1	125.9
1963.....	135.8	95.3	93.4	142.5	145.3
1964.....	122.3	92.5	89.3	132.2	136.9
1965.....	128.3	87.2	83.4	147.1	153.9
1966.....	145.4	79.9	77.6	182.0	187.3
1967.....	124.7	82.1	78.3	151.9	159.3
1968.....	133.5	80.2	74.9	166.5	178.3
Annual trend rate of change..... p.c.	1.7	-3.5	-3.8	5.4	5.7
COMMERCIAL NON-AGRICULTURAL INDUSTRIES					
1946.....	47.9	69.7	76.2	68.7	62.8
1947.....	52.1	75.9	82.3	68.7	63.3
1948.....	54.0	78.4	85.0	68.9	63.5
1949.....	56.1	80.2	86.0	70.0	65.2
1950.....	59.9	81.8	86.6	73.2	69.2
1951.....	64.0	86.4	90.7	74.1	70.6
1952.....	67.4	88.5	92.6	76.1	72.8
1953.....	71.5	89.9	93.5	79.5	76.4
1954.....	72.2	88.7	91.3	81.4	79.0
1955.....	79.3	91.5	93.7	86.7	84.6
1956.....	80.8	97.0	99.6	89.5	87.2
1957.....	88.6	99.8	101.8	88.7	87.0

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-68— continued

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
COMMERCIAL NON-AGRICULTURAL INDUSTRIES—concluded					
1958	89.1	97.3	98.8	91.6	90.2
1959	94.7	99.7	101.3	95.0	93.5
1960	96.5	99.6	100.6	96.9	95.9
1961	100.0	100.0	100.0	100.0	100.0
1962	106.5	103.1	103.2	103.3	103.2
1963	112.0	105.6	105.0	106.0	106.6
1964	120.8	110.3	109.6	109.5	110.2
1965	129.6	116.5	115.2	111.2	112.5
1966	137.4	122.3	119.5	112.4	115.0
1967	141.7	124.2	121.2	114.0	116.9
1968	147.9	126.1	122.1	117.3	121.2
Annual trend rate of change	5.1	2.3	1.8	2.7	3.3
NON-AGRICULTURAL GOODS-PRODUCING INDUSTRIES					
1946	44.1	78.9	85.3	55.9	51.7
1947	48.5	85.9	92.3	56.5	52.5
1948	51.3	88.2	94.8	58.2	54.1
1949	53.3	89.9	95.3	59.3	55.9
1950	57.6	92.1	97.1	62.5	59.3
1951	62.4	98.7	103.5	63.3	60.3
1952	65.5	100.0	104.4	65.5	62.7
1953	70.6	100.8	105.5	70.0	66.9
1954	71.0	97.0	99.6	73.2	71.3
1955	78.8	100.4	102.7	78.5	76.7
1956	87.3	106.3	109.1	82.1	80.1
1957	89.2	107.3	109.1	83.1	81.8
1958	89.1	101.3	102.6	88.0	86.8
1959	94.8	103.3	105.2	91.7	90.1
1960	96.5	101.6	102.7	95.0	93.9
1961	100.0	100.0	100.0	100.0	100.0
1962	108.6	102.8	103.6	105.7	104.8
1963	114.6	104.7	105.1	109.4	109.0
1964	125.9	109.3	110.1	115.2	114.4
1965	137.3	115.4	116.1	119.0	118.3
1966	146.8	120.6	120.7	121.7	121.6
1967	149.3	120.0	119.8	124.4	124.6
1968	157.1	120.2	119.7	130.7	131.2
Annual trend rate of change	5.8	1.5	1.1	4.2	4.6
MANUFACTURING					
1946	50.7	81.2	88.2	62.5	57.5
1947	55.4	86.8	93.4	63.8	59.3
1948	57.8	88.8	95.9	65.1	60.2
1949	59.5	90.2	95.6	66.0	62.2
1950	63.4	91.7	96.3	69.1	65.8
1951	68.9	97.3	100.3	70.8	68.7
1952	71.5	99.9	101.9	71.6	70.2
1953	76.6	103.0	105.6	74.4	72.5
1954	74.9	98.6	99.2	76.0	75.5
1955	82.2	101.1	102.3	81.3	80.4
1956	89.9	105.3	107.3	85.4	83.8
1957	89.7	105.8	106.4	84.8	84.3
1958	88.0	100.5	101.2	87.5	87.0
1959	94.5	101.7	103.0	92.9	91.8
1960	96.1	100.5	101.0	95.7	95.2
1961	100.0	100.0	100.0	100.0	100.0
1962	110.5	102.7	103.1	107.6	107.1
1963	118.0	105.2	105.6	112.1	111.7
1964	129.2	110.0	111.0	117.4	116.4
1965	141.0	115.7	116.1	121.8	121.5
1966	151.2	121.2	120.7	124.8	125.2
1967	151.7	121.3	121.1	125.1	125.3
1968	159.4	121.8	121.6	130.9	131.1
Annual trend rate of change	5.1	1.4	1.1	3.7	4.0

15.—Indexes of Output per Person Employed and Output per Man-Hour, 1946-68—
concluded

Year	Output	Persons Employed	Man-Hours	Output per Person Employed	Output per Man-Hour
NON-MANUFACTURING INDUSTRIES (COMMERCIAL NON-AGRICULTURAL)					
1946.....	46.6	64.6	71.2	72.2	65.4
1947.....	50.6	70.9	77.6	71.3	65.2
1948.....	52.3	73.7	80.4	70.9	65.0
1949.....	54.6	75.7	82.0	72.1	66.6
1950.....	58.3	77.4	82.6	75.4	70.6
1951.....	61.8	81.4	86.6	75.9	71.4
1952.....	65.6	83.4	88.7	78.6	73.9
1953.....	69.2	84.0	88.5	82.4	78.2
1954.....	71.0	84.2	88.0	84.3	80.7
1955.....	78.0	87.2	90.2	89.4	86.5
1956.....	85.4	93.3	96.4	91.5	88.6
1957.....	88.1	97.2	99.9	90.6	88.2
1958.....	89.6	95.8	97.8	93.6	91.7
1959.....	94.8	98.7	100.6	96.0	94.2
1960.....	96.7	99.2	100.4	97.5	96.3
1961.....	100.0	100.0	100.0	100.0	100.0
1962.....	104.7	103.4	103.3	101.3	101.4
1963.....	109.3	105.8	104.7	103.3	104.4
1964.....	117.0	110.5	109.0	105.9	107.4
1965.....	124.5	116.9	114.8	106.5	108.5
1966.....	131.2	122.8	118.9	106.8	110.3
1967.....	137.2	125.8	121.3	109.1	113.1
1968.....	142.7	128.3	122.3	111.2	116.7
Annual trend rate of change..... p.c.	5.1	2.8	2.2	2.3	2.9



Section 4.—Canadian Balance of International Payments*

The regularly published statements of the Canadian balance of international payments indicate the nature and magnitude of Canada's transactions in goods and services and financial operations with the rest of the world. They show separately the balances on visible and invisible trade which comprise the current account, as well as the net movements of long-term and short-term capital, and the resulting changes in Canada's reserves consisting of the holdings of gold and foreign exchange, the net (International Monetary Fund) position and any 'swap' facilities with other countries.

In recent years Canada has consistently had deficits on the current account and surpluses on the capital account. During the past 10 years total deficits on current account amounting to \$9,395,000,000 were more than offset by total surpluses on capital account amounting to \$10,224,000,000. The outcome of this pattern has been an increase in Canada's reserves during the past 10 years (1958-67) of \$829,000,000.

Current Account Transactions.—Merchandise trade in 1967 produced a higher surplus for Canada than in the preceding two years and at \$481,000,000 was the third highest since 1960. During 1967 exports increased by over \$1,000,000,000 to \$11,387,000,000 and imports by about \$800,000 to \$10,906,000,000.

About \$740,000,000, or about 70 p.c. of the increase of \$1,061,000,000 in merchandise exports during 1967 arose from larger shipments of automotive products to the United States and other destinations abroad. Based on a comparison of 12-month totals of other commodity groups, exports of non-ferrous metals gained about \$200,000,000 in 1967. About half of this rise was attributable to copper alone; the prolonged strike in the copper industry in the United States was a factor in the increase. Shipments of aircraft, engines and parts rose nearly \$100,000,000 as also did natural gas, petroleum and products together. Aircraft parts and crude petroleum were particularly important. Industrial and agricultural machinery accounted for about another \$45,000,000 of the export rise. There were smaller but still important gains in the exports of barley, lumber, pulp, sulphur, communication equipment and firearms. Shipments of canned fish, whisky, tobacco, iron ores, chemicals, fertilizers and office machines increased moderately. Wheat shipments, on the other hand, fell nearly \$330,000,000 in 1967. Well over half of this decline occurred in shipments to the Soviet Union and another one third in the deliveries to Mainland China. Much smaller declines took place in shipments of meat, wheat flour, flaxseed, hides and skins, and uranium.

Merchandise imports rose \$804,000,000 to \$10,906,000,000 in 1967. About \$590,000,000 or more than 70 p.c. of this expansion applied to imports of automotive products. Imports of aircraft, engines and parts accounted for about \$134,000,000 of the increase. Crude petroleum imports were over \$55,000,000 higher. Less substantial imports included a wide range of commodities such as hardware products, communication equipment, electronic computers, laboratory equipment, photographic goods, books and a variety of food items and consumer goods. Imports of iron ores and concentrates declined about \$30,000,000 and of nickel and alloys nearly as much, from an unusually high level in 1966.

On the invisible trade side, which includes transactions associated with travel, freight and shipping, interest and dividends and other current payments and receipts, on which Canada consistently runs a deficit, there was in 1967 a net payment of \$843,000,000, the smallest deficit on this side of the current account since 1957. Receipts from invisible trade transactions in 1967 amounted to \$3,698,000,000 while total payments, including official contributions of \$181,000,000, amounted to \$4,541,000,000.

* More detailed information is given in DBS annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201), in the *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001) and in the *Canadian Balance of International Payments: A Compendium of Statistics from 1948 to 1965* (Catalogue No. 67-505 Occasional).

The reduction of \$362,000,000 in the deficit on non-merchandise transactions was due primarily to the increase in travel receipts. From \$840,000,000 in 1966, the highest figure recorded up to that year since 1946, travel receipts by Canada rose by 55 p.c. to \$1,304,000,000. This phenomenal rise was attributable to Expo 67 and other Centennial Year activities. The greater part of this increase originated from expenditures in Canada of travellers from the United States. Travel expenditures abroad by Canadians fell slightly from \$900,000,000 in 1966 to \$877,000,000, as many Canadians stayed home in 1967 for the Centennial attractions.

The other major 'invisible' component on which a significant increase in receipts took place was the freight and shipping account. This item rose by \$87,000,000 to \$845,000,000, representing 23 p.c. of total invisible receipts amounting to \$3,698,000,000 in 1967. Payments, however, rose by \$61,000,000 to \$884,000,000, leading to a deficit on this item of \$39,000,000, that is, \$54,000,000 and \$26,000,000 less than the 1965 and 1966 deficits, respectively. Higher receipts and payments on this item in 1967 were the result of rising merchandise trade. Greatly lowered grain shipments, strikes in the transportation industry in Canada and abroad and the Middle East crisis had a mixed impact on these transactions.

The balance on inheritances and migrants' funds rose by 77 p.c. to \$124,000,000. This resulted from an increase of about 14 p.c. in the number of immigrants to approximately 223,000 (second only to 1957 in the postwar period) and from higher per capita funds brought in by immigrants arriving in 1967, offset by an increase of \$15,000,000 to an estimated total of \$213,000,000 in emigrants' funds. Receipts and payments of interest and dividends reflect Canada's past borrowing, lending and investment abroad. Receipts of interest and dividends in 1967 amounting to \$294,000,000 were the lowest since 1964. Dividend receipts by several Canadian companies on their direct investment abroad were significantly lower while a withholding tax adjustment relating to transfers in earlier years by a large oil company accounted for a further reduction in the total. Portfolio earnings abroad, however, were appreciably higher following continuing large purchases of United States securities by Canadian investors. Payments of interest and dividends abroad amounting to \$1,190,000,000 and representing 25 p.c. of total non-merchandise payments in 1967 increased in line with the upward trend evident in this series. Interest payments rose following large United States purchases of new corporate and provincial bond issues during 1966 and 1967. Moreover a substantial increase in the profits of unincorporated Canadian branches of United States companies largely offset the reduction in payments by Canadian subsidiaries to their United States parent companies. The deficit of \$896,000,000 on this particular item was equivalent to about $2\frac{1}{2}$ times the surplus on the rest of the current account in 1967.

The other major component of the current account, namely 'all other current receipts and payments' is composed of a number of items covering the public and private sectors of the economy. The transactions falling under this component are grouped under the following principal categories: government transactions, personal and institutional remittances, miscellaneous investment income and business services. Including official contributions, the deficit on this account rose by 18 p.c. to \$752,000,000. Canada's official economic aid in cash grants and donations of goods and services to developing countries abroad increased from \$166,000,000 in 1966 to \$181,000,000 in 1967, the highest recorded figure up to that year. A remission of the principal and interest on loans extended for purchasing Canadian wheat and flour constituted the major part of the rise in aid. Smaller increases took place in both bilateral and multilateral types of aid, including assistance to Commonwealth countries and independent French-speaking states in Africa as well as contributions to international agencies. The other element that contributed to the increased deficit was the extraordinary flow of personal and institutional remittances following the Middle East crisis in 1967. Net payments for business services continued to rise but were offset by reduced deficits on miscellaneous investment income and by increased expenditures by foreign participants at Expo 67.

With the improvement in both the merchandise and the invisible trade balances, the current account deficit was reduced to \$543,000,000 from over \$1,000,000,000 in each of the years 1965 and 1966. The 1967 deficit was the third lowest current account deficit since 1954.

The traditional triangular pattern of current international transactions between Canada, the United States and other countries remained unchanged in 1967. The deficit with the United States, which in 1967 amounted to \$1,379,000,000, was reduced by a surplus of \$836,000,000 on transactions with other countries. However, the improvement of about 32 p.c. in the deficit with the United States was accompanied by a reduction of about 4 p.c. in the surplus with the rest of the world.

16.—Current Account Transactions Between Canada and All Countries, 1948-67

(Millions of dollars)

Year	Current Receipts		Current Payments			Net Balance on Current Account Indicating Net Movement of Capital
	Merchandise	Other ¹	Merchandise	Official Contributions	Other ¹	
1948	3,030	1,117	2,598	23	1,075	+ 451
1949	2,989	1,100	2,696	6	1,210	+ 177
1950	3,139	1,148	3,132	5	1,469	- 319
1951	3,950	1,342	4,101	9	1,694	- 512
1952	4,339	1,534	3,854	16	1,816	+ 187
1953	4,152	1,587	4,212	25	1,950	- 448
1954	3,934	1,598	3,916	11	2,029	- 424
1955	4,332	1,749	4,543	24	2,201	- 687
1956	4,837	1,795	5,565	30	2,409	- 1,372
1957	4,894	1,742	5,488	40	2,559	- 1,451
1958	4,890	1,704	5,066	53	2,612	- 1,137
1959	5,151	1,725	5,572	72	2,719	- 1,487
1960	5,392	1,787	5,540	61	2,811	- 1,233
1961	5,889	1,934	5,716	56	2,979	- 928
1962	6,387	2,077	6,203	36	3,055	- 830
1963	7,082	2,230	6,579	65	3,189	- 521
1964	8,238	2,556	7,637	69	3,612	- 424
1965	8,745	2,775	8,627	93	3,930	- 1,130
1966	10,326	3,070	10,102	166	4,290	- 1,162
1967	11,387	3,698	10,906	181	4,541	- 543

¹ Includes mutual aid to NATO countries.

17.—Geographical Distribution of the Balance on Current Account Between Canada and Other Countries, 1948-67

(Millions of dollars)

Year	United States ¹	Britain	Other Overseas Countries	All Countries	Year	United States ¹	Britain	Other Overseas Countries	All Countries
1948	- 393	+ 486	+ 358	+ 451	1958	- 1,167	+ 97	- 67	- 1,137
1949	- 601	+ 446	+ 332	+ 177	1959	- 1,221	+ 16	- 282	- 1,487
1950	- 385	+ 24	+ 42	- 319	1960	- 1,359	+ 169	- 43	- 1,233
1951	- 945	+ 223	+ 210	- 512	1961	- 1,341	+ 195	+ 218	- 928
1952	- 830	+ 387	+ 630	+ 187	1962	- 1,092	+ 225	+ 37	- 830
1953	- 907	+ 132	+ 327	- 448	1963	- 1,148	+ 417	+ 210	- 521
1954	- 800	+ 229	+ 147	- 424	1964	- 1,635	+ 605	+ 606	- 424
1955	- 1,029	+ 332	+ 10	- 687	1965	- 1,937	+ 505	+ 302	- 1,130
1956	- 1,650	+ 253	+ 25	- 1,372	1966	- 2,030	+ 425	+ 443	- 1,162
1957	- 1,579	+ 120	+ 8	- 1,451	1967	- 1,379	+ 484	+ 352	- 543

¹ Includes all net exports of monetary gold.

Capital Movements.—Net capital inflows into Canada fell to \$561,000,000 in 1967 compared with \$803,000,000 in the preceding year. Capital movements in long-term forms led on balance to net inflows of \$1,339,000,000 while those in short-term forms produced an outflow of \$778,000,000. Although the capital influx contracted sharply between 1966 and 1967, the fall in the current account deficit to \$543,000,000 was even more dramatic so that the balance of current and capital account transactions produced an increase of \$18,000,000 in official monetary assets.

Categories of long-term transactions which led to the largest net inflows were, particularly, sales of new issues of Canadian securities followed by direct investment in Canada and long-term capital transactions *n.i.e.*, in which repayments under export credits programs and foreign bank loans to Canadian companies were prominent. The principal outflows arose from retirements of Canadian securities held abroad and Canadian net purchases of foreign securities. Government transactions associated with the level of official monetary assets fell to about \$60,000,000 in 1967 from \$175,000,000 in 1966. These transactions, to the extent that they involved repatriation of Government of Canada bonds, are included in the total of retirements of Canadian securities while purchases of outstanding United States dollar issues of the International Bank for Reconstruction and Development are reflected in the trading in outstanding foreign securities.

Capital movements in the short-term forms led to an outflow of \$778,000,000, some \$520,000,000 greater than in 1966. Among the larger changes were the fall in the outflow for the acquisition by Canadians of foreign currency bank deposits and other short-term funds abroad, the increase in the run-down of non-resident holdings of Canadian finance company paper and the reduction in the total of other new short-term liabilities to non-residents incurred by finance companies. The largest swing, however, was in all other transactions, which includes changes in loans and in accounts receivable and payable as well as the balancing item representing the difference between direct measurements of the current and capital accounts.

Canada's official holdings of gold and foreign exchange rose moderately during 1967 while Canada's net balance with the IMF fell, so that, on balance, Canada's net international monetary assets in these forms rose by \$18,000,000; in 1966, Canada's net international monetary assets in these forms were reduced by \$359,000,000. In addition, Canada's net balance or reserve position with the IMF amounted to \$433,000,000 (U.S.) at the end of the year, \$15,000,000 lower than at the beginning. The total represents the net resources made available by Canada to the IMF and may be drawn by Canada virtually automatically on statement of balance of payments need, as was done in the first quarter of 1968 to counteract a speculative attack on the Canadian dollar. Official holdings of gold and United States dollars, expressed in United States funds, totalled \$2,268,000,000 at the year end, a rise of \$32,000,000 in the year.

18.—Balance of International Payments Between Canada and All Countries, 1961-67

(Millions of dollars)

Item	1961	1962	1963	1964	1965	1966	1967
Current Receipts—							
Merchandise exports (adjusted).....	5,889	6,387	7,082	8,238	8,745	10,326	11,387
Mutual aid to NATO countries.....	35	41	23	47	39	18	16
Gold production available for export.....	162	155	154	145	138	127	112
Travel expenditures.....	482	562	609	662	747	840	1,304
Interest and dividends.....	213	202	230	332	322	318	294
Freight and shipping.....	486	509	563	644	668	758	845
Inheritances and immigrants' funds.....	104	124	151	169	216	268	337
All other current receipts.....	452	484	500	557	645	759	806
Totals, Current Receipts	7,823	8,464	9,312	10,794	11,520	13,414	15,101

18.—Balance of International Payments Between Canada and All Countries, 1961-67—
concluded

Item	1961	1962	1963	1964	1965	1966*	1967
Current Payments—							
Merchandise imports (adjusted).....	5,716	6,203	6,579	7,537	8,627	10,102	10,906
Travel expenditures.....	642	605	585	712	796	900	877
Interest and dividends.....	764	783	860	1,010	1,086	1,140	1,190
Freight and shipping.....	568	595	648	679	761	823	884
Inheritances and emigrants' funds.....	176	175	185	201	211	198	213
Official contributions.....	56	36	65	69	93	166	181
Mutual aid to NATO countries.....	35	41	23	47	39	18	16
All other current payments.....	794	856	888	963	1,037	1,229	1,377
Totals, Current Payments.....	8,751	9,294	9,833	11,218	12,650	14,576	15,644
Balance on merchandise trade.....	+173	+184	+503	+701	+118	+224	+481
Balance on other transactions.....	-1,101	-1,014	-1,024	-1,125	-1,248	-1,386	-1,024
Current Account Balance.....	-928	-830	-521	-424	-1,130	-1,162	-543
Capital Account—							
Direct Investment—							
Direct investment in Canada.....	+560	+505	+280	+270	+535	+710	+620
Direct investment abroad.....	-80	-105	-135	-95	-125	-5	-90
Canadian Securities—							
Trade in outstanding issues.....	+100	-51	-131	-21	-219	-240	-44
New issues.....	+548	+729	+984	+1,100	+1,240	+1,465	+1,300
Retirements.....	-301	-319	-404	-382	-390	-499	-338
Foreign security transactions.....	-35	-65	+22	-52	-85	-401	-418
Loans and subscriptions by Government of							
Canada.....	+30	+107	+7	—	-4	-11	-4
Other long-term capital transactions.....	+108	-113	+14	—	-88	+42	+313
Change in Canadian dollar holdings of foreigners..	-27	-10	+17	+12	+45	—	+24
Other short-term capital movements.....	+315	+307	+13	-45	+378	-258	-802
Net Capital Movement, Exclusive of Monetary Items.....	+1,218	+985	+667	+787	+1,287	+803	+561
Official Monetary Movements—							
Change in official holdings.....	+229	+537	+60	+86	-11	-462	+34
Change in net International Monetary Fund position.....	+61	-378	+86	+277	+168	+103	-16
Other special international financial assistance....	—	-4	—	—	—	—	—

19.—Current and Capital Account Transactions Between Canada and the United States, 1961-67

(Millions of dollars)

Item	1961	1962	1963	1964	1965	1966*	1967
Current Receipts—							
Merchandise exports (adjusted).....	3,213	3,767	3,970	4,396	4,993	6,249	7,325
Gold production available for export.....	162	155	154	145	138	127	112
Travel expenditures.....	435	512	549	590	660	730	1,158
Interest and dividends.....	112	120	155	190	204	194	187
Freight and shipping.....	230	259	279	301	337	411	437
Inheritances and immigrants' funds.....	51	61	65	77	91	106	106
All other current receipts.....	336	345	342	359	409	484	501
Totals, Current Receipts.....	4,539	5,219	5,514	6,058	6,832	8,301	9,826

19.—Current and Capital Account Transactions Between Canada and the United States, 1961-67—concluded

Item	1961	1962	1963	1964	1965	1966*	1967
Current Payments—							
Merchandise imports (adjusted).....	3,828	4,205	4,458	5,204	6,034	7,242	7,980
Travel expenditures.....	459	419	388	481	548	628	609
Interest and dividends.....	630	656	727	850	906	985	1,034
Freight and shipping.....	333	353	378	399	465	530	540
Inheritances and emigrants' funds.....	136	139	152	157	160	145	156
All other current payments.....	494	539	559	602	656	801	886
Totals, Current Payments.....	5,880	6,311	6,662	7,693	8,769	10,331	11,205
Current Account Balance.....	-1,341	-1,092	-1,148	-1,635	-1,937	-2,030	-1,379
Capital Account—							
Direct Investment—							
Direct investment in Canada.....	+366	+328	+220	+188	+421	+638	+516
Direct investment abroad.....	-25	+6	-36	-35	-24	+87	-41
Canadian Securities—							
Trade in outstanding issues.....	+196	+73	-64	-14	-174	-167	+14
New issues.....	+489	+690	+930	+1,040	+1,200	+1,409	+1,233
Retirements.....	-220	-247	-315	-300	-330	-456	-293
Foreign security transactions.....	-7	-55	+25	-41	-72	-371	-376
Other long-term capital transactions.....	+154	-115	+83	+175	+84	+98	+174
Change in Canadian dollar holdings of foreigners.....	-23	+27	+7	+16	+10	+15	-1
Other short-term capital movements.....	+381	+366	-21	+610	-678	-194	-890
Net Capital Movement.....	+1,311	+1,073	+829	+1,639	+437	+1,059	+336
Balance Settled by Exchange Transfers.....	+257	+554	+378	+27	+1,543	+488	+1,027
Official Monetary Movements—							
Change in official holdings.....	+227	+538	+59	+31	+43	-483	-16
Other special international financial assistance....	—	-3	—	—	—	—	—

20.—Current Account Transactions Between Canada and Britain, 1961-67

(Millions of dollars)

Item	1961	1962	1963	1964	1965	1966*	1967
Current Receipts—							
Merchandise exports (adjusted).....	924	924	1,017	1,219	1,184	1,133	1,199
Travel expenditures.....	21	22	28	33	34	39	30
Interest and dividends.....	37	28	81	80	44	32	35
Freight and shipping.....	100	98	105	130	132	121	125
Inheritances and immigrants' funds.....	25	28	43	46	55	81	81
All other current receipts.....	54	66	77	102	109	113	124
Totals, Current Receipts.....	1,161	1,166	1,301	1,610	1,558	1,519	1,594
Current Payments—							
Merchandise imports (adjusted).....	593	578	521	584	624	664	651
Travel expenditures.....	71	71	70	80	89	94	97
Interest and dividends.....	87	85	82	104	114	93	94
Freight and shipping.....	93	88	94	89	86	89	104
Inheritances and emigrants' funds.....	23	18	15	24	30	30	31
All other current payments.....	99	101	102	124	110	124	133
Totals, Current Payments.....	966	941	884	1,005	1,053	1,094	1,110
Current Account Balance.....	+195	+225	+417	+605	+505	+425	+484

Section 5.—Canada's International Investment Position*

Canada's balance of international indebtedness reached a book value of over \$24,500,000,000 by the end of 1968, a sixfold increase over the past two decades. Long-term foreign investment in Canada was approaching \$36,500,000,000 and other claims of non-residents added about \$4,500,000,000 to Canada's liabilities. Canadian assets abroad had a total book value of \$16,500,000,000, including long-term investments amounting to about \$10,000,000,000.

The balance of international indebtedness is a phrase generally accepted in balance of payments terminology to include equity investments as well as contractual borrowings. Its size and character have a considerable influence on Canada's balance of payments. This is true not only through the servicing of capital involving interest, dividends and miscellaneous income payments, but also through the influence of foreign investment on the Canadian economy and on the shape and direction of its external demands.

Canada has been among the world's largest importers of private long-term capital. The very substantial capital formation which was a feature particularly of the 1950s was associated with an unprecedented growth in the country's external liabilities. These investments contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and added significantly to Canadian production, employment and income. At the same time they added substantially to the continuing burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to \$35,200,000,000 at the end of 1965; non-resident-owned long-term investments in Canada reached a book value of \$29,500,000,000 (in the two decades following World War II their value quadrupled). The part of these investments in enterprises controlled outside of Canada totalled \$17,200,000,000. There was a sharp expansion in direct investments in 1965 following the more moderate rates of growth recorded in recent years. Investments in other Canadian equities, although smaller, were also substantial, and there were periods in recent years of sharp increase in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore, potash and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled \$13,100,000,000 at the end of 1965 and government-owned assets made up a substantial part of that total. Canada's net balance of international indebtedness, including equity investments, at the same date was estimated at \$22,100,000,000, more than three quarters of which was incurred since 1950.

Foreign Investments in Canada.—Dependence upon external sources of capital for financing in periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth that occurred before World War I, non-resident investment was very high and the main source of that investment was London.

* This review covers Canada's international investment position in 1965, although a few estimated totals for 1968, available at the time of writing are included in the first paragraph and under the heading "Canada's Assets Abroad". An extended historical review appears in DBS report *Canada's International Investment Position, 1926 to 1954* (Catalogue No. 67-503) and more recent statistics in the annual report *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201). Additional detailed material will be found in the annual report under the Corporations and Labour Unions Returns Act.

However, during the first part of the inter-war period, the United States became the principal source of external capital and by 1926 the portion of Canada's international debt owned in that country exceeded that owned in Britain. With some interruption during the 1930s, United States investment in Canada continued to increase, particularly after 1947 when the period of intense activity in the petroleum industry got under way. Nearly half of the United States investment in Canada at the end of 1965 was accumulated since 1956. At \$23,305,000,000, United States investments in the later year continued to represent more than three quarters of all non-resident investments in Canada and made up over 80 p.c. of the increase since 1956. The main rise occurred in direct investments in companies controlled in the United States, which almost doubled in the 1956-65 period. In the same period, portfolio investments in Canada owned in the United States more than doubled, due mainly to large sales of new issues of securities made in that country.

British investments in Canada totalled \$3,498,000,000 at the end of 1965 and accounted for only about 12 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. After reaching a low point in 1948, the value of British investments in Canada increased each year to 1962, declined slightly in 1963, partly as a result of Canadian repatriation of investments in railways and other utilities, and increased again in 1964 and 1965.

Investments of countries other than the United States and Britain reached a record total of \$2,704,000,000 at the end of 1965. Exceeding three times the 1955 figure, this represented a much higher rate of increase than had occurred in either United States or British investments, and large increases had taken place in portfolio holdings of securities as well as in direct investments. At about 9 p.c. of the total, compared with 6 p.c. in 1954, this group of countries, mostly in Western Europe, accounted for a slightly larger proportion of total foreign investments than in 1964. Over 90 p.c. of the direct investments, which totalled \$1,255,000,000 in 1965, came from Western Europe; about one quarter was of Netherlands origin, with Belgian, French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1953 the net use of foreign resources amounted to about one seventh and direct foreign financing to almost 30 p.c. of net capital formation in Canada. But from 1958 to 1961 when these ratios had increased considerably to 34 p.c. and 47 p.c., respectively, they were still less than the corresponding ratios in the 1929 to 1930 period when inter-war investment activity was at its highest point. In that shorter period more than one half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was financed by external capital. After 1961 these ratios declined somewhat; from 1962 to 1965 the net use of foreign resources comprised 19 p.c. of net capital formation in Canada and direct foreign financing 43 p.c. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing predominate such as in merchandising, agriculture, housing, public utilities and other forms of social capital. Thus, non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1963 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 54 p.c. owned by non-residents but capital subject to foreign control was 60 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as the end of 1954. In the field of petroleum and natural gas, non-resident

21.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1959-66

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions ['000 millions] of dollars)

Item	1959	1960	1961	1962	1963	1964 ^r	1965 ^r	1966 ^p
Canadian Liabilities—								
Direct investment.....	11.9	12.9	13.7	14.7	15.4	15.9	17.2	18.9
Government and municipal bonds.....	3.1	3.3	3.4	3.7	4.2	4.7	5.0	5.2
Other portfolio investments.....	4.6	4.6	4.7	4.7	4.7	4.7	5.2	5.7
Miscellaneous investments.....	1.3	1.4	1.7	1.8	1.8	2.0	2.2	2.3
Foreign Long-Term Investments in Canada.....	20.9	22.2	23.6	24.9	26.1	27.4	29.5	32.1
Equity of non-residents in Canadian assets abroad.....	1.0	1.1	1.2	1.3	1.4	1.6	1.6	1.6
Canadian dollar holdings of non-residents.....	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Gross Liabilities¹.....	22.4	24.0	25.4	26.8	28.1	29.5	31.8	34.3
United States ¹	17.0	18.0	19.3	20.6	22.0	23.1	25.0	27.3
Britain ¹	3.4	3.5	3.5	3.6	3.5	3.6	3.7	3.8
Other countries ^{1,2}	2.1	2.4	2.5	2.6	2.6	2.8	3.1	3.2
Short-term payables ³	1.4	1.6	1.9	2.0	2.3	3.2 ⁴	3.4 ⁴	..
Gross Liabilities.....	23.8	25.6	27.3	28.8	30.4	32.8	35.2	..
Canadian Assets—								
Direct investment.....	2.3	2.5	2.6	2.8	3.1	3.3	3.5	3.7
Portfolio investments.....	1.2	1.3	1.5	1.7	1.8	1.9	2.1	..
Government of Canada credits.....	1.5	1.5	1.4	1.3	1.3	1.5	1.5	1.5
Government of Canada subscriptions to international investment agencies.....	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Miscellaneous investments ⁵	—	—	0.1	0.2	0.3	0.4	0.6	..
Canadian Long-Term Investments Abroad.....	5.0	5.3	5.7	6.2	6.6	7.3	7.8	..
Government of Canada holdings of gold and foreign exchange.....	1.8	1.8	2.2	2.7	2.8	2.9	2.9	2.4
Net IMF position.....	0.1	0.2	0.2	-0.1	-0.1	0.2	0.4	0.4
Other Canadian short-term holdings of exchange.....	1.0	1.2	1.1	1.0	1.3	1.8	1.7	2.3
Gross Assets¹.....	8.0	8.5	9.2	9.8	10.6	12.2	12.8	..
Government of Canada holdings of gold, foreign exchange and net IMF position..	1.9	2.0	2.4	2.6	2.7	3.1	3.3	2.8
United States ^{1,6}	3.3	3.7	3.9	4.1	4.7	4.9	5.9	..
Britain ^{1,6}	1.4	1.5	1.5	1.6	1.9	2.6	2.2	..
Other countries ^{1,2}	1.3	1.3	1.4	1.5	1.3	1.6	1.5	..
Short-term receivables ³	0.5	0.5	0.5	0.5	0.5	0.4	0.3	..
Gross Assets.....	8.5	9.0	9.7	10.2	11.1	12.6	13.1	..
Canadian Net International Indebtedness—Net Liabilities.....	15.3	16.6	17.6	18.6	19.3	20.2	22.1	..
Government of Canada holdings of gold, foreign exchange and net IMF position..	-1.9	-2.0	-2.4	-2.6	-2.7	-3.1	-3.3	-2.8
United States ^{1,6}	13.6	14.3	15.4	16.5	17.3	18.2	19.1	..
Britain ^{1,6}	1.9	2.0	2.0	2.0	1.6	1.0	1.5	..
Other countries ^{1,2}	0.8	1.1	1.1	1.1	1.4	1.2	1.6	..
Short-term indebtedness ³	1.0	1.1	1.4	1.6	1.8	2.8	3.0	..

¹ Excludes short-term receivables and payables.² Includes international investment agencies.³ Country distribution not available.⁴ Includes about \$900,000,000 of finance company obligations, some of which were in earlier years shown as long-term investments.⁵ Includes reserve against inactive assets.⁶ Excludes Government of Canada holdings of gold and foreign exchange.

ownership and control amounted to 64 p.c. and 74 p.c., respectively, at the end of 1963, whereas at the end of 1954 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 62 p.c. and 59 p.c., respectively, compared with 53 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence,

non-resident ownership in a broad range of business activity, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 35 p.c. in 1963. But, in the same years, companies subject to non-resident control increased from 25 p.c. to 34 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled by non-residents. The enterprises having an investment in Canada of \$1,000,000 or more accounted for about 40 p.c. of Canadian manufacturing production in 1961 and 29 p.c. of employment in that field. About 33 p.c. of Canadian manufacturing production and 22 p.c. of employment originated with United States-controlled plants. These ratios in United States-controlled plants were somewhat higher than in 1953—the previous year for which a study of this kind was made. In some industries the proportions of production and employment in plants controlled by non-residents were much higher than this. Automobiles, for example, are produced mainly in United States-controlled plants, but this is exceptional. Other industries in which well over one half of the production is in non-resident-controlled firms include the smelting and refining of non-ferrous metals, petroleum refining, motor vehicle parts, aircraft and parts, and industrial chemicals. In several major industries like fruit and vegetable canning and preserving, and miscellaneous machinery and equipment manufacturing the distribution of control between Canadian and foreign-controlled companies is more even. In such industries as pulp, paper, and miscellaneous food manufacturing, the non-resident share is large although less than one half of the total.

There are, however, many industries where the largest part of production is in Canadian-controlled plants. Prominent among these are such important branches of industry as iron and steel mills, sawmills, feed manufacturing, clothing, and such divisions of the food and beverage group as bakeries and slaughtering and meat packing, pasteurizing and butter and cheese plants.

22.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1959-66
(Millions of dollars)

Type of Investment	1959	1960	1961	1962	1963	1964*	1965*	1966*
Government Securities—								
Federal.....	612	611	657	788	899	897	880	649
Provincial.....	1,585	1,632	1,743	1,862	2,217	2,564	2,828	3,171
Municipal.....	915	1,026	1,038	1,087	1,091	1,221	1,257	1,333
Totals, Government Securities.....	3,112	3,269	3,438	3,737	4,207	4,682	4,965	5,153
Public Utilities—								
Railways.....	1,405	1,406	1,366	1,270	1,231	1,236	1,038	1,064
Other (excluding pipelines and public enterprises).....	739	743	656	691	590	605	666	758
Totals, Public Utilities.....	2,144	2,149	2,022	1,961	1,821	1,841	1,704	1,822
Manufacturing (excluding petroleum refining).....	5,726	6,115	6,446	6,731	7,074	7,532	8,366	9,280
Petroleum and natural gas.....	3,455	3,727	4,029	4,384	4,703	4,799	5,192	5,720
Other mining and smelting.....	1,783	1,977	2,094	2,297	2,347	2,473	2,555	2,871
Merchandising.....	878	872	917	972	1,003	1,092	1,196	1,297
Financial.....	2,190	2,380	2,616	2,688	2,847	2,503	2,875	3,135
Other enterprises.....	284	297	348	366	361	408	483	550
Miscellaneous investments.....	1,285 ¹	1,428	1,696	1,753	1,771	2,037 ²	2,171 ²	2,264 ²
Totals, Investment.....	20,857	22,214	23,606	24,889	26,134	27,367	29,507	32,092
United States³.....	15,826	16,718	18,001	19,155	20,479	21,443	23,305	25,724
Britain³.....	3,199	3,359	3,381	3,399	3,331	3,476	3,498	3,518
Other countries.....	1,832	2,137	2,224	2,335	2,324	2,448	2,704	2,850

¹ New series.

² Includes \$273,000,000 of Columbia River Treaty receipts.

³ Includes some investments held for residents of other countries.

**23.—Foreign Capital Invested in Canada, by Type of Investment, classified by
Estimated Distribution of Ownership, as at Dec. 31, 1965 and 1966**

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States ¹	Britain ¹	Other Countries	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1965				
Government Securities—				
Federal.....	675	10	195	880
Provincial.....	2,729	62	37	2,828
Municipal.....	1,214	28	15	1,257
Totals, Government Securities.....	4,618	100	247	4,965
Public Utilities—				
Railways.....	401	473	164	1,038
Other (excluding pipelines and public enterprises).....	619	24	23	666
Totals, Public Utilities.....	1,020	497	187	1,704
Manufacturing (excluding petroleum refining).....	6,934	1,066	366	8,366
Petroleum and natural gas.....	4,170	524	498	5,192
Other mining and smelting.....	2,199	199	157	2,555
Merchandising.....	822	283	91	1,196
Financial.....	1,823	566	486	2,875
Other enterprises.....	395	61	27	483
Miscellaneous investments.....	1,324	202	645	2,171
Totals, Investments.....	23,305	3,498	2,704	29,507
1966²				
Government Securities—				
Federal.....	486	7	156	649
Provincial.....	3,056	73	42	3,171
Municipal.....	1,290	28	15	1,333
Totals, Government Securities.....	4,832	108	213	5,153
Public Utilities—				
Railways.....	436	467	161	1,064
Other (excluding pipelines and public enterprises).....	704	29	25	758
Totals, Public Utilities.....	1,140	496	186	1,822
Manufacturing (excluding petroleum refining).....	7,789	1,083	408	9,280
Petroleum and natural gas.....	4,657	542	521	5,720
Other mining and smelting.....	2,463	208	200	2,871
Merchandising.....	912	289	96	1,297
Financial.....	2,040	525	570	3,135
Other enterprises.....	454	67	29	550
Miscellaneous investments.....	1,437 ²	200	627	2,264
Totals, Investments.....	25,724	3,518	2,850	32,092

¹ Includes some investments held for residents of other countries.

² Includes \$273,000,000 of Columbia River Treaty receipts.

Canadian Assets Abroad.—Although there has been a great growth in non-resident investment in Canada and in the balance of indebtedness of other countries, it will be noted that Canadian assets abroad, shown in Tables 21, 24 and 25, have continued to rise in value. These now equal a larger proportion of liabilities abroad than was the case before World War II, but more than one quarter of the increase since then has been in government-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the war and early postwar years. At the end of 1966 the government credits outstanding had a value of \$1,451,000,000 and at the end of 1967 official holdings of exchange and Canada's net IMF position amounted to

some \$2,926,000,000 in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank for Reconstruction and Development, the International Development Association, the International Finance Corporation and the Asian Development Bank which, by March 1968, amounted to \$85,000,000, \$85,700,000, \$3,500,000 and \$5,400,000, respectively; these were partly offset by liabilities to these institutions.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. At the end of 1966, Canadian direct investment abroad totalled \$3,737,000,000. Portfolio investment abroad by Canadians amounted to \$2,136,000,000 at the end of 1965. About two thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields, among which the beverage and farm implement industries are particularly noteworthy.

24.—Canadian Long-Term Investments Abroad, 1959-66

NOTE.—Excludes investments of insurance companies and banks (held mainly against liabilities to non-residents), Canada's subscriptions to international investment agencies, and miscellaneous investments (Table 21). Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates.

(Millions of dollars)

Assets	1959	1960	1961	1962	1963	1964	1965 ¹	1966
Direct investments in enterprises outside Canada.....	2,286	2,467	2,596	2,784	3,082	3,298	3,495	3,737
Portfolio holdings of foreign securities.....	1,183	1,315	1,471	1,723	1,806	1,942	2,136	..
Government credits.....	1,495	1,462	1,424	1,301	1,285	1,517 ¹	1,495 ¹	1,451
Totals.....	4,964	5,244	5,491	5,808	6,173	6,757	7,126	..

¹ Includes \$219,000,000 and \$187,000,000 in 1964 and 1965, respectively, covering medium-term non-marketable United States Government securities acquired under the Columbia River Treaty arrangements.

25.—Canadian Long-Term Investments Abroad, by Location, as at Dec. 31, 1965 and 1966

NOTE.—See headnote to Table 24.

Location of Investment	Direct Investments	Portfolio Investments		Government Credits	Total Investments
		Stocks	Bonds		
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1965					
United States.....	2,041	1,515	119	187	3,862
Britain.....	508	60	14	1,078	1,660
Other Commonwealth countries.....	453	15	31	19	518
Other foreign countries.....	493	246	136	211	1,086
Totals, 1965.....	3,495	1,836	300	1,495	7,126
1966					
United States.....	2,100	..	..	156	..
Britain.....	587	..	..	1,059	..
Other Commonwealth countries.....	505	..	..	27	..
Other foreign countries.....	565	..	..	209	..
Totals, 1966.....	3,737	..	..	1,451	..

Private investments in overseas countries are widely distributed. Somewhat more than one half of the total in 1966 were located in Commonwealth countries, with slightly more in Britain than in the remainder of the Commonwealth. Most of the direct investments in Britain were in industry, while in other Commonwealth countries investments in mining were of almost equal importance with those in industry. In foreign overseas countries the largest part was in the countries of Latin America where Canadian holdings in public utilities are substantial.

Section 6.—Government Economic Planning Agencies

Subsection 1.—The Economic Council of Canada

The Economic Council of Canada was established by Act of Parliament (SC 1963, c. 11) assented to on Aug. 2, 1963. The Council is an economic advisory body with broad terms of reference. The central feature of its duties is "to advise and recommend . . . how Canada can achieve the highest possible levels of employment and efficient production in order that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to recommend what government policies . . . will best help to realize the potentialities of growth of the economy; to consider means of strengthening and improving Canada's international financial and trade position; . . . to study how national economic policies can best foster the balanced economic development of all areas of Canada; . . .". Outside of its responsibilities to study and advise on the problems and potential of the Canadian economy, Sect. 11 of the Economic Council Act sets out certain additional duties of the Council, designed to promote productivity gains in all sectors of the economy.

In addition to the duties set out in Sects. 9 and 11 of the Economic Council Act, Parliament made provision for the Council to undertake special studies at the request of the Government in areas that fall within the purview of its general terms of reference. In its first five years, the Council has had two such References. In its first Reference, the Government asked the Economic Council to launch an examination into prices, costs, incomes and productivity and their relationship to sustained economic growth. The Council reported to the Government and to the Canadian public on this Reference in its *Third Annual Review*. A second Reference from the Government asked the Council: "In the light of the Government's long-term economic objectives, to study and advise regarding: (a) the interests of the consumer particularly as they relate to the functions of the Department of the Registrar General (now the Department of Consumer and Corporate Affairs); (b) combines, mergers, monopolies and restraint of trade; (c) patents, trade marks, copyrights and registered industrial designs." An interim report under Sect. (a) of this Reference was published in July 1967; an interim report under Sect. (b) will be released in the summer of 1969.

The Council has no operational responsibilities. It does not implement or administer any policies or programs nor does it have the authority to make research grants, although it may make contractual arrangements with persons other than its staff for the purpose of advising and assisting the Council in the performance of its duties.

The Council consists of up to 28 members appointed by the Governor in Council, including a chairman and two directors who serve full time in their professional capacity and up to 25 members who are selected from industry, labour, finance and commerce, agriculture and other primary industries, and the general public. The chairman and the directors (one of whom is elected as vice-chairman by the Council) are appointed for seven-year terms. The other members are appointed for three-year terms "after consultation with appropriate representative organizations" and are intended to reflect a very wide diversity of interests from the different private sectors of the economy and different regions of the country, but they sit on the Council as individuals and not as delegates of particular organizations or groups. The Council is therefore a mixed body rather than an expert professional body,

although it is served in its deliberations by an expert staff. There are no government members appointed to the Council. Under the Act, the chairman is the chief executive officer of the Council and has supervision over, and direction of, the work and staff of the Council.

The publications policy of the Economic Council is based on two provisions of the Act, one that requires the Council to publish annually a review of the medium- and long-term prospects and problems of the Canadian economy, and a second that empowers the Council to publish, as it sees fit, such studies and reports prepared for its use. These provisions enable the Council to carry out a most vital function, namely, the dissemination of information to the public as a means of stimulating informed appraisal and discussion of economic problems and policies.

The Council's publications* fall into three broad categories: (1) The Annual Reviews which summarize the results of the Council's studies and present its conclusions and recommendations (five of which have been issued to date); (2) Staff and Special Studies which provide more detailed statistical, technical, and analytical results of the various research projects; and (3) Conference papers and other reports.

In its *First Annual Review* the Council stated its underlying philosophy of approach in this way:—

We are concerned not with the question of inventing new forms of intervention, but rather with ordering and developing our policies and social programmes in a rational and coherent manner designed to accomplish consistently what the society has declared to be its economic and social goals. For this purpose it is essential to bring to bear the needs of the future on the decisions of today. This applies not only to decisions by governments but also to decisions in the private sector of the economy.

Canada's Economic Potential

The Canadian economy since the Second World War has encountered at one time or another inflation, higher unemployment, slow rates of economic growth, and even crises in the balance of international payments. This experience serves well to demonstrate that the real problem is not how to achieve one particular economic or social objective, but rather how to attain all of them—consistently—at the same time. This is another way of saying that the various goals are not always compatible with one another; there is always an over-riding requirement to reconcile conflicts.

Once there is general public agreement on the broad set of goals to be pursued, the next task is to define them quantitatively in accordance with Canadian circumstances and possibilities. This the Council has done, publishing "targets". These targets are not forecasts or prophecies but are intended to be measures of desirable performance of the economy—that is, concrete aims of public policy. These objectives or targets were first set out by the Council in its *First Annual Review*, were revised and updated in the *Fourth Annual Review*, and are in the process of being revised again for the *Sixth Annual Review*, to be published in September 1969.

* The *Reviews*, like all Council publications, are available from the Queen's Printer, Ottawa. They are: *First Annual Review: Economic Goals for Canada to 1970* (\$2.50, Catalogue No. EC21-1/1964); *Second Annual Review: Towards Sustained and Balanced Economic Growth* (\$2.75, EC21-1/1965); *Third Annual Review: Prices, Productivity and Employment* (\$2.75, EC21-1/1966); *Fourth Annual Review: The Canadian Economy from the 1960's to the 1970's* (\$2.75, EC21-1/1967); *Fifth Annual Review: The Challenge of Growth and Change* (\$2.75, EC21-1/1968).

Among other Council publications of more general interest are: *Business Cycles in Canada*, by Derek A. White (\$2.25, EC22-1/17); *Perspective on Canada's International Payments*, by David W. Slater (\$1.60, EC22-2/3); *Incomes Policies—Some Foreign Experiences and Their Relevance for Canada*, by David C. Smith (\$1.75, EC22-2/4); *Internal Migration in Canada, 1921-1961*, by Isabel B. Anderson (\$1.60, EC22-1/13); *Enrolment in Schools and Universities, 1951-52 to 1975-76*, by W. M. Illing and Z. Zsigmond (\$1.25, EC22-1/20); *Population, Family, Household and Labour Force Growth to 1980*, by W. M. Illing, et al. (\$1.00, EC22-1/19); *Canadian Policies for Rural Adjustment—A Study of the Economic Impact of ARDA, PFRA and MMRA*, by Helen Buckley and Eva Tihanyi (\$2.25, EC22-2/7); *National Conference on Labour-Management Relations, Ottawa, March 21-22, 1967* (\$2.00, EC22-3/67); *Interregional Disparities in Income*, by S. E. Chernick (\$1.75, EC22-1/14); *Scale and Specialization in Canadian Manufacturing*, by D. J. Daly, L. A. Keys, and F. J. Spence (\$1.75, EC22-1/21); *Canadian Income Levels and Growth: An International Perspective*, by Dorothy Walters (\$2.25, EC22-1/23); *Science, Technology and Innovation*, by Andrew H. Wilson (\$1.50, EC22-2/8); *Interim Report—Consumer Affairs and the Department of the Registrar General* (\$2.25, EC22-10/67); *Medium-Term Capital Investment Survey 1968*, by B. A. Keys, D. S. Rothwell, F. G. Thompson (available from the Economic Council of Canada); A complete list of Council publications is available from the Secretary, Economic Council of Canada, P.O. Box 527, Ottawa. Also available from the Secretary are the *Annual Reports of the Chairman*, which include the Act establishing the Council and the membership of the Council.

Full Employment.—The Council believes that, over the medium-term future, economic policies should be actively directed toward achieving 97 p.c. employment—that is, no more than 3 p.c. of the labour force unemployed. But this is not regarded by the Council as an ultimate or satisfactory goal for all time; as it has stated, “We would hope that with sustained improvement in our economic performance it may eventually become realistic to aim for an even better performance in the level of employment”. The Council also emphasized that the target rate is an average annual rate allowing for seasonal variation, and is a national average within which there will be some regional variation. Considering the rapid rate of increase in the numbers of people entering the labour force in Canada—close to 240,000 persons a year, on average, between 1965 and 1975—this goal would mean that the economy would have to grow fast enough to provide 2,400,000 new jobs over that ten-year period.

A High Rate of Economic Growth.—In calculating a potential rate of increase in total production (and thus incomes) the Council views economic growth as arising from: (1) increases in the *quantity* and *quality* of resources (for example, more manpower and capital, and higher levels of education and more efficient equipment); and (2) increases in productivity or in the efficiency with which men and capital are used and combined.

For the period to 1975, the Council has projected an average annual growth of 5.5 p.c. in the *volume* of production of all goods and services (*volume* in the sense that price increases are deducted from the value of production). Approximately two fifths of this gain in output would come from the employment increase, with a slight increase in the average educational level of the labour force. Another one fifth, roughly, would come from increased investment by government and industry. The remaining portion of the growth rate, around one third, would stem from productivity gains. The potential growth rate of 5.5 p.c. a year is high by both historical and international standards. It implies an increase in the total volume of output from \$66,000,000,000 in 1967 to about \$100,000,000,000 by 1975. This would mean an increase in the average standard of living in Canada—that is, total income divided by total population—of approximately one third. But if the economy fails for one reason or another to keep up to its potential, the loss would be great. For example, an average growth rate of 5 p.c. instead of the potential 5.5 p.c. over the 1967-75 period would mean a “loss” of more than \$3,000,000,000 in national income.

Reasonable Price Stability.—Price stability has been defined by the Council in the following terms:—

A satisfactory degree of price and cost stability would exist if, in the period to 1970, average annual increases in prices and costs could be held within the limits of the 1953-63 experience—for example, in this period, the average annual increases in consumer prices and in the prices of all goods and services produced in Canada were 1.4 p.c. and 2.0 p.c. respectively, but with moderate year-to-year variations around these rates. An important condition for the attainment of this goal will be the achievement and maintenance of a reasonable price stability abroad and especially in the United States.

There was an extended period of generally good performance on price and cost stability over the 1961-66 expansion. Only when the previous economic slack had disappeared and the economy approached close to potential output at a time of rapid expansion in final demand in late 1965 and early 1966, did price increases become persistent and pervasive. The GNP implicit price index rose at the rate of 4.6 p.c. between 1965 and 1966. During 1966, price and cost pressures eased.

In its projections to 1970, the Council assumed that the GNP price index would rise at an average annual rate of 2 p.c. The Council said it would regard this as consistent with the attainment of a satisfactory degree of price and cost stability over the medium-term future, at least under conditions of reasonable price stability abroad, particularly in the United States. Such an average rate of price increase would imply that some demand components—government expenditures, housing, and business investment in plant and

equipment—would rise at a somewhat faster rate than the total and that the rate of advance in consumer prices and in export and import prices would be somewhat less. The Council added:—

We recognize that the achievement of this degree of price and cost stability will be extraordinarily difficult under conditions of high demand and high employment, as has been amply demonstrated by developments of the past three years. However, we continue to regard it as one of the basic goals towards which Canadians should continue to strive in the conduct of their economic affairs, with particular emphasis on longer-range policies designed to deal with basic structural and regional problems—that is, policies which would facilitate the consistent achievement of both our employment and price goals.

A Viable Balance of Payments.—After careful reappraisal in 1967, the Council concluded that the balance-of-payments goal set out in 1964 was appropriately formulated in terms of a current account deficit (and accompanying net capital inflow) at potential input in 1970 in the order of \$1,500,000,000 to \$2,000,000,000 and that this goal is still relevant.

The current account deficit was \$1,100,000,000 in 1966. It is estimated that this deficit will widen somewhat over the 1966-70 period and that, at potential output in 1970, it could be in the neighbourhood of \$1,700,000,000. The total deficit will be accounted for entirely by the deficit on services, which is projected to rise from \$1,500,000,000 in 1966 to \$1,900,000,000 at potential output in 1970. A small surplus on merchandise trade would continue.

The current account deficit of \$1,700,000,000 at potential output in 1970 would represent about 2.2 p.c. of GNP, a smaller reliance on the net import of resources from abroad than in several past periods of strong economic growth. The equivalent net capital inflow would also be correspondingly small in relation to GNP and would represent a reduced reliance on net foreign capital inflows in relation both to the domestic investment and domestic savings, compared with most previous periods of strong Canadian economic growth. At potential output in 1970, net capital inflows would make up less than 10 p.c. of the estimated total demand for savings of \$18,100,000,000. However, the Council observed that the \$1,700,000,000 capital inflow would still be a very sizable requirement for external financing in circumstances of a prevailing world shortage of capital, uncertainties about moves to strengthen the international monetary system, and possibly continuing strains in the United States balance of payments. Thus, it would be inappropriate to assume that the external capital will always be easily available on the scale needed by Canada.

Equitable Distribution of Rising Incomes.—This is an extremely complex goal, defying simple formulation. The Council believes that much more information is needed about the distribution of income among individuals, families and various occupational groups. For example, why do some groups receive little benefit from the general rise in incomes and living standards? What elements lie behind the vicious circle of poverty that still traps far too many people? Although some of these problems may range far beyond the field of economics, the Council has said that these difficult matters will have to be understood and faced if appropriate policies are to be devised to achieve the goal of equitable distribution of rising incomes. To date, the Council's work in this area has been concentrated on two aspects of the fifth goal, namely regional disparities and poverty.

The problem of assuring an appropriate participation on the part of each region in the over-all process of national economic development has long been an elusive goal and a continuing concern of the people of Canada. The Council's analysis showed that over the past four decades there has been relatively little progress toward the achievement of a better balance in this respect. Despite various policies and programs, very wide disparities have continued to exist in average per capita income. Also, there have continued to be wide differences in the extent to which the human and material resources of each region have found opportunities for productive use. Although national prosperity has always

tended to have a favourable influence everywhere, rapid national growth has not by itself served to bring about any significant or lasting reduction in these large and stubborn differences.

Regional levels of personal income per capita (in current dollars) are shown for three selected groups of years in the following statement. Provinces are ranked in order of level of income in 1963 and the data are for three-year averages centred on the year shown.

<i>Province</i>	<i>1957</i>	<i>1947</i>	<i>1963</i>
	\$	\$	\$
Ontario.....	509	981	2,025
British Columbia (incl. the Yukon and Northwest Territories).....	535	980	1,966
Alberta.....	509	923	1,750
Saskatchewan.....	449	818	1,749
Manitoba.....	455	875	1,721
Quebec.....	378	709	1,521
Nova Scotia.....	299	676	1,302
New Brunswick.....	277	609	1,167
Prince Edward Island.....	248	477	1,115
Newfoundland.....	...	...	1,009
PROVINCIAL AVERAGE.....	407	783	1,532

The most striking features of the above comparisons are the substantial percentage differences in income levels between the highest and lowest province and the fact that the rankings of the provinces in terms of income levels have hardly changed over a period of almost 40 years.

In its *Fifth Annual Review*, the Council took a look at regional aspects of federal economic policies—the objects of such policy being to improve regional balances, that is, both the narrowing of interregional income disparities and the full and efficient use of available resources in each region. The case for regionally discriminating stabilization policies in Canada has come to rest largely on the persistence of higher unemployment levels in the lower-income regions at times when the national economic conditions, dominated as they are by more prosperous provinces, call for policies and restraint.

The Council suggested that in framing regionally oriented stabilization policy, the federal authorities would have to concentrate largely on fiscal rather than monetary policy, and especially on the expenditure side of the budget. It was observed that there was a strong tendency for per capita federal development expenditures to be highest in provinces with the lowest per capita incomes, thus contributing to a narrowing of existing income differences among the regions. The unavoidable impression that emerges from the Council's review of federal economic policies is that they have exerted a pervasive but inconsistent impact upon the various regional economies. On the basis of its analysis, the Council articulated the following guidelines for regional development policy: improving the utilization of manpower resources; raising the level of productivity within each region; assuming the adequate expansion of growth-related public services; and stimulating innovation, the application of new technology and the development of new viable lines of economic activity.

Like the objective of improved regional balance, the elimination of poverty is one aspect of the still broader goal of an equitable distribution of rising incomes. Poverty is a relative matter, and generally accepted conceptions of it vary through time and space. Poverty today is not the same as poverty in the Great Depression of the 1930s and the poverty today in Canada is not the same as poverty in the underdeveloped countries of Southeast Asia. In order to get a statistical grip on the problem of poverty, the Council agreed to define it as "an insufficient access to certain goods, services, and conditions of life which are available to everyone else and have come to be accepted as basic to a decent, minimum standard of living". Thus stated, the definition begs many questions, most of which could become the subject of a long and inconclusive debate. Rather than engage in such a debate, the Council proceeded directly to a statistical embodiment of the definition sufficiently simple that it could be appreciated and judged by a broad public in relation to personal, everyday economic experience.

On the basis of information regarding family-spending patterns, so-called "poverty lines" were traced for individuals and families of different sizes. A basic assumption for the main set of estimates was that any family or individual spending more than 70 p.c. of total income on food, clothing and shelter was in a low-income situation and likely to be suffering from poverty. These poverty lines were expressed in the *Fifth Review* in terms of 1961 dollars; adjusted to dollars of 1968 purchasing power, they come out at \$1,800 a year for a single person, \$3,000 for a family of two, \$3,600 for a family of three, \$4,200 for a family of four and \$4,800 for a family of five. Obviously, these are conservative cut-offs; living standards at or just above such levels would be modest indeed.

Using income data derived from the 1961 Census, it was possible to analyse some of the characteristics such as the age, sex and education of family heads; size of family, geographical region of residence, and place of residence (metropolitan, other urban or rural) of those falling below the poverty lines. As of 1961, some 916,000 non-farm families plus 416,000 individuals were living below these levels. The total number of persons involved was 4,200,000, including 1,700,000 children under 16 years of age. In all, they accounted for some 27 p.c. of the total non-farm population of Canada in that year.

Statistics cannot adequately describe poverty but, used with care, they are capable of furnishing important clues to types of policies likely to be effective against poverty.

It is evident from the incidence figures that income is more likely to be low when one or more of the following characteristics are present: (1) the head of the family has no formal education beyond elementary school; (2) the family lives in a rural area; (3) the family lives in the Atlantic Provinces; (4) the head of the family is not a member of the labour force; (5) no member of the family worked during the year; (6) the head of the family is 65 years of age or over; (7) the head of the family is a woman. From that list, it is all too easy to form a picture of poverty in Canada that consists of a relatively few stereotyped categories, but a more balanced picture of the total low-income population of Canada is necessary. In view of the following observations, it is therefore vital in framing policy not to be over-influenced by rates of incidence: (1) 62 p.c. of the low-income non-farm families in 1961 lived in urban areas and of this group more than half lived in metropolitan areas; (2) 83 p.c. of low-income non-farm families lived elsewhere than in the Atlantic Provinces—53 p.c. of them lived in Ontario and the Western Provinces; (3) 68 p.c. of the same group of families had heads who were in the labour force for at least part of the year; (4) 76 p.c. of the group had one or more earners in the family; (5) 77 p.c. of the family heads in the group were under 65 years of age; (6) 87 p.c. of families in the group were headed by men. It can thus be seen that a set of anti-poverty policies directed toward major groups or geographical areas showing a very high incidence of low incomes would almost certainly fail to deal adequately with poverty.

The Council called for a more concerted and purposeful attack on poverty in Canada. The challenge, in the short run, is to alleviate conditions which today thrust many Canadian families and individuals into involuntary poverty and hold them there. In the long run, the challenge is to prevent the development of these conditions.

Sources of Economic Growth

The Economic Council has emphasized repeatedly that productivity gains are the essence of economic growth, in the sense that they are the real source of improvement in the average living standards of people—that is, in average incomes. By productivity is meant the increase in the output of goods and services in relation to the resources required to produce them. Increases in productivity are generally traced to two basic kinds of influences:—

- (1) Improvements in the productive quality of the factors of production. (This would include rising levels of knowledge, education and skill in the labour force—including the managerial group—and better machinery and equipment, or higher quality natural resources.)
- (2) Improvements in the efficiency with which the productive factors are combined. (By this is meant, for example, a more efficient organization of the production process, increased specialization and larger scale or production, and shifts of manpower and capital from less-productive to more-productive lines of employment.)

The measurement and analysis of productivity still bristles with technical and conceptual difficulties. Further complications arise from the fact that the factors are frequently interrelated—advancing technology and better management and skills go hand in hand; increased scale and specialization require not only expanding markets but also flexibility and adjustability of economic resources. There is still much to learn about how these various factors act and interact, and it is extremely difficult to isolate the role and importance of any one of them. Despite these difficulties, the Council has devoted a large part of its research effort to these matters in the hope of improving public understanding of the real sources of growth in incomes and living standards.

Education and Economic Growth

The basic role of education as a factor contributing to economic growth and rising living standards was stressed in the Council's *First Annual Review*, especially in the discussion of Canada's vital need for creating and maintaining an adequate supply of professional, technical, managerial and other highly skilled manpower as a basis for future growth. The *Second Annual Review* attempted a closer examination of education as a factor in growth.

Scale and Specialization.—Whereas the over-all productivity in Canada has been estimated to be one fifth lower than in the United States, the Council in its *Fourth Annual Review* estimated that, in the manufacturing area alone, the productivity gap between the two countries appeared to be in the order of one third or more. This difference reflects in considerable part the way in which production is organized—diversification, mechanization, technology, efficient use of resources, management, morale, attitudes, etc. The measure should not be taken simply as a reflection on the energy, basic ability or enthusiasm of Canadians.

Many factors may influence the size of the productivity gap in manufacturing. One of these—but only one—is scale and specialization. The term “economies of scale” is rather loosely used and in some discussions seems to be used almost synonymously with “size of market”, “size of firm”, “size of plant” or “size of production runs”. The latter—the size of production runs and the degree of specialization or diversification of production—appears to be highly relevant. There is a general pattern of greater diversification of products and typically shorter production runs in Canadian plants. This involves frequent changes and interruptions in production and scheduling, and this in turn contributes to less-efficient use of both manpower and capital, and has a pervasive upward influence on all the basic categories of cost per unit of output. The Council believes that greater specialization would contribute to the lowering of costs of all major types—material, labour and overhead. It would make possible in many lines of production an increase in output with essentially the same quantity of labour and capital facilities. This would reduce labour and overhead costs per unit of output and permit similar economies in materials on the basis of comparable developments in firms supplying materials and components.

The Council observed that it is sometimes suggested that one route toward increased scale and specialization would be to facilitate intercompany agreements to permit more specialized patterns of production between firms and longer production runs within the plants of various firms. But the Council said it should be recognized that industrial rationalization may reduce competition within Canada, especially in circumstances in which trade barriers protect producers from external competition and in which there is already a relatively high degree of industrial concentration in many lines of Canadian manufacturing. The Council's conclusion:—

The route of tariff reduction for manufactured products is, in our judgment, the most promising of all routes towards increased specialization in Canada and the consequent narrowing of the existing gap in productivity in manufacturing between Canada and the United States. By ‘tariff reduction’ we mean negotiated reductions in both Canadian and foreign tariffs.

Science, Technology and the Economy

From the beginning of its work, the Council has been centrally concerned with problems associated with growth and change. Growth essentially involves change, and technological change has been, and will continue to be, an important factor in the longer-term growth and development of Canada. The Council has consistently emphasized the role of science and technology in the economy. In its *First Annual Review*, published in 1964, the Council concluded that, with respect to R & D activities, "the most urgent need for further rapid development pertains to universities and private industries". It was with this concern in mind that, in its first year, the Council set up an Advisory Committee on Industrial Research and Technology to consider the role of research and technology in Canadian economic growth. In December 1965, the Committee's recommendations concerning federal incentive programs to encourage research and development in Canadian industry were published by the Council.

In the Council's *Fifth Annual Review, The Challenge of Growth and Change*, a Chapter was devoted to "Science, Technology and the Economy". In this Chapter, the Council discussed certain economic aspects of science and technology—the relationships of technological change and innovation to economic growth, some of the determinants of technological advance, the management and diffusion of scientific and technical knowledge to facilitate better business performance, the underdeveloped state of the social sciences in Canada, and the problem of allocating resources to maximize the returns from investment in scientific and technological activities. A very brief summary of the recommendations contained in that Chapter are set out below. The Council recommended:—

- (1) that *innovation*—the crucial stages beyond R & D—be given greater recognition in "science policy";
- (2) that the capacity for Canadian business management to undertake successful innovation be strengthened;
- (3) that new and more effective means be developed to harness information on science, technology and innovation, both from abroad and from Canadian sources, in both the public and private sectors;
- (4) that Canada's indigenous scientific and technological effort be strengthened, particularly in industry;
- (5) that support for the social sciences be greatly increased, and that "science policy" should have regard to the need for more interrelated activities across the whole spectrum of research, including the natural sciences, the social sciences and the humanities.

The Changing Structure of the Economy

Much of the Council's analysis of economic growth in Canada has been cast in highly aggregative terms. However, studies of the patterns and sources of growth of individual sectors of the economy can provide significant additional knowledge about productivity growth and help to lay the basis for more carefully attuned economic policies. In its earlier *Reviews*, the Council has explored some of the changes in characteristics that have been associated with economic growth in Canada, including both regional growth and development, and development and implementation of rapid urban growth. The *Fifth Review* began to describe the patterns and sources of growth in major groups of industries.

In the past, Canadian economic analysis and policies have been largely centred on the performance of goods-producing industries, even though the service-producing industries have expanded greatly. At the end of the Second World War, 60 p.c. of Canada's labour force was employed in goods-producing industries and 40 p.c. in service industries. These proportions now have reversed. The proportion of total Canadian employment in the service industries is similar to that in the United States but considerably above that of the European countries.

Of the total employment increase of 2,500,000 in Canada from 1946 to 1966, some 2,100,000 of the new jobs were in the service industries. The most rapid employment increases have been in finance, insurance and real estate, and a group of industries that includes community, business and personal service, public administration and defence. Employment in trade also has risen rapidly.

One view that has been held by many is that the potential for Canada's growth is mainly to be found in its rich natural resources. Another view is that industrialization brings an enormous relative growth in manufacturing, including the processing of raw materials. The facts do not support such views; in most of the industrially advanced countries, whether or not they are rich in natural resources, it is the service industries that appear to be growing most rapidly.

Productivity in Agriculture

As part of the analysis of sources of growth of individual sectors, the Council devoted a Chapter in its *Fifth Review* to productivity in agriculture. This Chapter examined changes in the volume of production and in the resources and technology used in agriculture and assessed their impact on the productivity of the agricultural labour force. One hundred years ago, Canada's society was predominantly agricultural, and more than three quarters of its working force was engaged in farming. Today, Canada is predominantly urban, and more than 90 p.c. of total employment is in non-farm activities. Despite the massive reduction of agricultural employment, the volume of total agricultural production over the past two decades has increased by roughly 50 p.c. and the rate of increase of labour productivity in agriculture has been considerably greater than in other sectors of the economy. However, average farm incomes have remained significantly lower than average non-farm incomes.

After analysing the sources of growth in agricultural labour productivity as well as the levels of labour productivity in resource inputs and factors influencing crop and live-stock yield technology, the Council drew the following policy implications:—

- (1) *Education*: Better education is essential for those who wish to stay in farming and who need to adopt modern and efficient production techniques.
- (2) *Financial assistance for mobility*: Effective policies for adjustment, particularly in the form of financial assistance for retraining and out-movement.
- (3) *Financial assistance for both retirement and farm consolidation*: Financial assistance for retirement should enable older farmers to retire without undue hardship; at the same time, selective financial assistance should enable the younger farmers to continue farming and to expand their farms towards the achievement of more efficient operations through farm consolidation.
- (4) *Farm management assistance*: Management assistance by monthly computer analysis of farm business accounts at reasonable cost per farm and more readily available credit could greatly help to put farm operations on a sounder business footing.

The Urbanization of Canada

The urbanization of any nation is closely related to the structure and growth of its economy and to rising income levels. In Canada, almost three quarters of the population lives in cities and towns occupying less than a hundredth of the total area of the country. The Economic Council says this degree of urbanization will continue to increase. Between 1966 and 1980, Canada's urban population is projected to rise by almost 5,800,000 people to over 20,000,000. By 1980, about 81 p.c. of the total Canadian population (estimated to reach almost 25,000,000 by then) will be urban and some 60 p.c. will be concentrated in 29 large city complexes of 100,000 or over. The net population gain to these large cities between now and 1980 is expected to be 4,500,000—a number equal to the combined total for metro Toronto and metro Montreal in 1967. The population growth of these two large metro areas combined is expected to be 2,500,000 in the period to 1980, so that taken together they may well total 7,000,000. Metro Vancouver is expected to go substantially over 1,000,000. Thus, by 1980, one out of three Canadians will live in one of these three large centres. A second group of six cities in the 500,000-1,000,000 population range—Winnipeg, Ottawa, Edmonton, Calgary, Hamilton and Quebec City—will have a combined population of about 3,600,000 by 1980. By then Canada is also likely to have about 20 cities in the 100,000-500,000 range, with a combined population of close to

3,500,000. Almost half of these 20 will lie along or close to the St. Lawrence River and lower Great Lakes. Thus, with the larger centres, they will contribute to the formation of an urban system stretching over a distance of about 600 miles.

This increasing urbanization in Canada has important implications for housing, social capital, municipal expenditures, fiscal capacity, and the many problems of big-city life including traffic congestion, air and water pollution, protection from crime, requirements for schools and recreational services, etc. In the Economic Council's view, this challenge calls for new and imaginative public policies involving all three levels of government, and new priorities in the allocation of resources. The Council, in fact, detects an "urgent need to update attitudes and approaches to over-all urban development and to certain commitments to resolving the complex and growing problems generated by such development". It adds:—

It is understandable that traditions of deeply rooted attachment to the land and natural resources that have shaped our national identity should persist strongly in our national consciousness. But without attempting to decry these values in any way, it is clear that they are hardly adequate today. In the second century of Confederation, it is essential to recognize and accept the predominantly urban character of Canadian society and to adopt policy approaches capable of dealing with the many new, pressing and difficult challenges.

Transportation.—The number of cars and trucks in Canada could increase by 60 p.c. to almost 11,000,000 by 1980, or one vehicle for every 2.3 persons. Projections suggest that 20 p.c. of Canadian families will own at least two cars. Large public investments will be needed to prevent traffic congestion from becoming ever more serious. The investment in urban expressways, arterial thoroughfares, collectors and rapid transit between now and 1980 could well exceed \$4,000,000,000 for centres of 100,000 or over. In the Council's judgment, "the problem of providing adequate urban transportation today ranks in economic importance with that of developing the national transcontinental transport system in the past".

Housing.—To meet the housing demand implied by its projections of new family and household formation, the Economic Council estimates that Canada will need an average of some 190,000 new housing units a year between 1966 and 1970—a four-year total of over 750,000 new units, with a heavy volume of completions concentrated in the latter part of the period. This housing demand is expected to continue to rise during the 1970s, reaching about 1,100,000 units in the first half of the decade and 1,300,000 to 1,400,000 units in the second half.

By the late 1970s about 90 p.c. of this housing construction will be in the cities. Further, with the increasing concentration of population in the largest of these urban complexes, new housing construction will shift increasingly to the metro areas. From an estimated volume of 630,000 units required in cities of 100,000 or over in 1966-70, it is anticipated that there will be a rise to about 800,000 in the first half of the 1970s and to somewhat above 1,000,000 in the second half. This implies that by 1980 the annual new housing demands of our 29 largest urban complexes will be as great as the entire national demand in 1970. If recent trends continue, by 1980 upwards of two thirds of this new construction in the large cities will take the form of apartments and other forms of multiple housing such as row-housing, duplexes and so-called town houses.

These estimates of new housing construction make allowance for a rising rate of replacement demand on the assumption of vigorous programs of renewal and redevelopment in the decaying areas of the larger and older cities. The 1961 Census did not reveal an extreme proportion of dilapidated housing and, in fact, the incidence of dwellings "in need of major repair" is rather less pronounced in the larger areas than for the country as a whole. Nevertheless, it appears that perhaps as many as 1,000,000 Canadians were

housed as of 1967 in substandard dwellings of this kind, and that about one quarter of these were in the large cities. The Council observed:—

With further rapid urbanization, the economic and social costs of poor housing and urban decay are bound to mount sharply unless long-range rehabilitative and preventive measures can be substantially widened and improved. Any acceleration or urban renewal, however, will clearly intensify the already pressing need for a great expansion in public housing. It will be essential to assure alternative and appropriate accommodation for the increasing numbers of people who may be displaced as a consequence of renewal projects. Successful and consistent development in both areas appear certain to require more comprehensive financial participation in total costs on the part of the senior governments, together with increased initiative, experimentation and integration in over-all planning by civic administrations.

Water Supply and Pollution Problems.—With the continued high rate of urban growth, the problems of adequate water supply and the disposal of domestic and industrial wastes are certain to grow more serious. For example, as the urban centre becomes larger it tends to use more water per resident. The average daily intake of water in Canada's 18 largest cities now is around 125 gal. per resident. It appears that by 1980 average daily consumption per person will rise to roughly 200 gal. Thus, it is estimated that, over the next 15 years, the largest cities must increase their water-supply capacity by some 1,500,000,000 gal. daily.

After use, approximately 80 p.c. of the urban intake of water for domestic and industrial purposes is discharged into the sewerage system. It is estimated that in 1960 only about 9,000,000 Canadians, or 75 p.c. of the urban population, were served by a sewerage system. Thus, a large volume of water intake in Canada is returned to streams and lakes in the form of raw or imperfectly treated sewage. Even where sewerage systems and treatment facilities exist, the prevalence of combined storm and sanitary sewers in many of our larger and older cities causes a considerable leakage of raw sewage during high-runoff periods.

The growing requirements for municipal water and sanitary facilities over the next 15 years will be added to a significant backlog of facilities in many areas. Since the 1930s, the capacity of these municipal services has grown at an annual rate of approximately 6 p.c.—or twice as fast as the growth in the urban population over the same period. If this relationship continues to apply over the next 15 years when 6,000,000 persons will be added to the urban population, it is estimated that the facilities will have to be doubled at an investment averaging roughly \$130,000,000 a year.

Air pollution problems will also mount. The major source of air pollution is the combustion of fuels such as oil, coal, natural gas and gasoline. For example, when measured in terms of weight, it is estimated that for every 100 tons of motor fuel used in combustion, almost 60 tons of carbon monoxide, hydro carbons and nitrogen oxide are discharged into the atmosphere. With the number of vehicles and traffic density increasing rapidly over the next 15 years, the prospective increase in the volume of pollutants from this source alone is massive. In some areas this air pollution threatens to be a serious health hazard. Although the relationship between air pollution and morbidity is difficult to establish, it has been estimated that in Canada 600,000 working days are lost each year as a result of chronic bronchitis and emphysema, attributable to impurities in the air.

Much remains to be learned before realistic and commonly accepted standards of air and water pollution can be established to guide a rational management or control policy, the Economic Council reported. Nevertheless, the Council regards the adoption of a set of standards as an essential first step in defining the goals for a policy of water management or pollution control. This would imply the need for an extensive program of research that goes beyond the purely technical aspects to consider the social and economic implications of pollution as well.

Municipal Organization.—Although the 1961 Census showed Canada having only 18 metropolitan areas or large city complexes of 100,000 people or more, within these areas

there were some 260 separate municipal government jurisdictions, together with an unknown number of semi-independent, single-purpose special authorities such as school boards, water boards, transit and utility commissions, and sewerage districts. In the opinion of the Council, it is doubtful whether this multiplicity of independent municipal units within a single metro economy is or can be effective in coping with the range and multitude of urban problems. The Council called for rapid modernization of local government structures, powers and administration, with the clear aim of building a structure of local government whose physical area of responsibility, extent of authority and political and administrative machinery are all in line with the range and scope of the problems to be dealt with. In many cases this would mean larger area boundaries and in others it would require more effective arrangements for inter-municipal co-operation and co-ordination. In the field of area-wide structure, the Council suggested that only strong provincial leadership is likely to be effective in the face of the attachment of local interests to entrenched fragmentation.

Municipal Finance.—Many municipalities in Canada have been caught in a squeeze as their own revenue sources—mainly the property tax—have failed to keep up with their spending requirements. In 1953-63 these taxes rose one and one half times as fast as personal income. The need to make annual decisions about whether to raise tax rates or assessment has some clear advantages for budget restraint and is in the interest of municipal taxpayers, but in the view of the Council it may create some built-in discrimination against services performed at the municipal level no matter how important they may be in relation to growth or the general welfare. In the large urban areas the squeeze will become tighter over the period to 1980 unless action is taken. The Economic Council said in part:—

... there is now a widening gap between the expanding responsibilities and the revenues of the larger cities of the country. This is now a nation-wide problem, and it is clearly necessary either to shift further responsibilities and related costs to higher levels of government or to develop and support local revenue systems so that they are more closely related to both the benefits and burdens of an increasingly complex, urbanized society. In either case, the change can be accomplished only within a comprehensive fiscal planning framework covering all levels of government.

Subsection 2.—The Department of Regional Economic Expansion

Under the Government Organization Act, 1969 (SC 1968-69, c. 28), passed by the House of Commons on Mar. 24, a Department of Regional Economic Expansion was established, the function of which is to ensure that economic growth is dispersed widely enough across Canada to bring employment and earning opportunities in the slow-growth regions as close as possible to those in the other parts of the country, without interfering with a high over-all rate of national growth. The legislation authorizes the Department, in co-operation with provincial governments and other federal agencies, to prepare development plans and programs designed to meet the special needs of particular areas. Specifically, the Minister of Regional Economic Expansion is empowered to: (1) recommend the designation of "special areas" where employment opportunities are severely limited and special action can improve economic growth; (2) formulate and carry out, in co-operation with other federal agencies, development plans and programs for these special areas; (3) enter into agreements with the provinces for the joint carrying out of development plans and programs—such an agreement may provide for federal financial support of the province's effort in implementing the development plan; (4) provide loans or grants to a province to help it build up the economic infrastructure of a special area where this is essential to the implementation of a development plan; and (5) provide special incentives, beyond those available under other programs, to a commercial undertaking whose establishment, expansion or modernization is essential to the success of a development plan for a special area.

The main components of the new Department have existed within the framework of the Department of Forestry and Rural Development since July 12, 1968, but certain

organizational and financial changes have been made by the 1969 legislation. Since the powers of the Department are not confined to rural areas but otherwise parallel those of the former legislation on the Fund for Rural Economic Development, that legislation has been repealed and the Department's operations will be conducted on the basis of normal annual appropriations, not of special funds. The Area Development Agency, which has administered the Area Development Incentives program, is absorbed into the structure of the new Department but additional assistance will be available under this program if special circumstances make it necessary to help a commercial undertaking establish, expand or modernize in a special area. Other regional and area development programs and agencies for which the Department is now responsible are unaffected by the legislation, including the Prairie Farm Rehabilitation Act (PFRA), the Agricultural and Rural Development Act (ARDA), the Maritime Marshland Rehabilitation Act, and the Atlantic Provinces Power Development Act.

The legislation provides for the establishment of an Atlantic Development Council to replace the Atlantic Development Board. It will consist of 11 members appointed by the Federal Government in consultation with the provinces of the Atlantic region. The structure of the new Council parallels that of the Board but constitutes a return to the original concept of the Board which was created in 1962 as an advisory body. The Council will advise the Minister on the whole range of programs and policies for fostering economic expansion and social adjustment in the Atlantic region, as well as on the effects of particular programs or policies in achieving this basic objective. Following is an outline of the functions of the former Atlantic Development Board, together with a list of projects approved and cumulative expenditures up to Mar. 31, 1968.

It is the intention of the new Department to undertake an extensive review of all existing programs in order to fit them fully into a co-ordinated program of regional development in Canada.

The Atlantic Development Board.—As stated immediately above, under the legislation (SC 1963, c. 28) establishing the Department of Regional Economic Expansion, the Atlantic Development Board ceased to exist, being replaced by the Atlantic Development Council, an advisory body only.

The Atlantic Development Board was established by Act of Parliament in December 1962 (SC 1962-63, c. 10), which was amended in 1963 and 1966. The first amendment established an Atlantic Development Fund of \$100,000,000 and the second increased it to \$150,000,000. In addition, the Board received \$55,000,000 in special Parliamentary appropriations to assist the four provinces in trunk highway improvements on a cost-sharing basis; \$2,000,000 to assist the Government of Nova Scotia with the operation of the Sydney steel plant; and \$1,750,000 to provide special housing and mobility assistance to residents of Bell Island, Nfld.

Functions of the Board were basically twofold: to undertake programs and projects aimed at stimulating the economic growth of the Atlantic region; and to prepare in consultation with the Economic Council of Canada an economic development plan for the region. The Board's staff, located in Ottawa and numbering 32 professional and 35 supporting personnel at Mar. 31, 1968, reflected these functions; the Board itself consisted of 11 unpaid members resident in the Atlantic region. During its six years of operation, the Board committed approximately \$195,000,000 of which about \$135,000,000 had been spent when the Act was repealed. Most of the funds went toward improving the economic infrastructure of the region—making grants to the provinces for electric power development, sharing in the cost of building modern trunk highways, constructing industrial water systems, assisting in the development of industrial parks, contributing to the cost of facilities for postgraduate and industrial research, and providing other basic services to industry. The Board's planning function included the study of various sectors of the economy of the region in preparation for their integration into a single comprehensive plan. By Mar. 31, 1969, most of the basic research had been completed and several studies published. The Board's planning responsibilities were taken over by the new Department.

Projects approved and cumulative expenditure from the Atlantic Development Fund to Mar. 31, 1968 were:—

<i>Project</i>	<i>Projects Approved</i>	<i>Cumulative Expenditure to Mar. 31, 1968</i>
	\$	\$
POWER—		
Bay d'Espoir, Nfld.—		
Hydro-electric power development.....	20,000,000	20,000,000
Mactaquac, N.B.—		
Hydro-electric power development.....	20,000,000	20,000,000
Nova Scotia Power Commission—		
Thermal power plant at Trenton, N.S.....	12,000,000	2,461,849
Power cable to link Prince Edward Island with mainland..	4,300,000	63,043
Newfoundland and Labrador Power Commission—Conver- sion to 60 cycles.....	4,000,000	3,818,891
Maccan to Amherst, N.S.—Grant towards cost of power line	112,800	112,800
	60,412,800	46,456,583
TRUNK HIGHWAY PROGRAM—		
Province of New Brunswick.....	3,000,000	3,000,000
Province of Newfoundland.....	3,000,000	3,000,000
Province of Nova Scotia.....	3,000,000	2,643,341
Province of Prince Edward Island.....	1,000,000	1,000,000
	10,000,000	9,643,341
ACCESS ROADS TO SELECTED FISHING PORTS—		
Province of Prince Edward Island.....	675,000	555,206
WATER SUPPLY AND/OR SEWAGE SYSTEMS—		
Fortune, Harbour Grace, Port Union, Fermeuse and Isle aux Morts, Nfld.....	2,934,000	1,232,396
Trepassey, Bay de Verde, Burgeo, Gaultois, St. Anthony, Englee and Twillingate, Nfld.....	2,657,000	706,294
Mooring Cove, Nfld.....	1,262,000	1,103,420
Long Harbour, Nfld.—Phosphorus plant.....	1,250,000	78,878
Nackawic, N.B.....	1,250,000	—
Dalhousie Area, N.B.....	1,100,000	—
Shelburne, N.S.....	890,000	49,139
Georgetown, P.E.I.....	850,000	762,893
Alder Point, N.S.....	833,000	23,566
Canso, N.S.....	775,420	763,909
Black's Harbour, Wellington, Beaver Harbour, N.B.....	690,000	—
Falmouth, N.S.....	600,000	—
Florenceville, N.S.....	565,000	—
Shippegan, N.B.....	505,546	474,084
Middle East Pubnico, N.S.....	487,000	29,500
Dildo South, Nfld.....	477,000	—
Bonavista, Nfld.....	292,000	269,941
North Rustico, P.E.I.....	282,000	86,365
Woodstock, N.B.....	275,000	248,471
Old Perlican, Nfld.....	270,000	17,773
Lockeport, N.S.....	255,000	30,610
East River in Lunenburg County, N.S.....	250,000	—
Ramea, Nfld.....	245,000	14,187
Riverport, N.S.....	242,000	139,478
Lower East Pubnico, N.S.....	220,975	204,399
Montague, P.E.I.....	190,000	137,869
Port Mouton, N.S.....	154,286	139,687
Newtown, Nfld.....	150,000	131,602
Cheticamp, N.S.....	140,000	95,873
Hartland, N.B.....	125,000	120,894
Milltown, N.B.....	100,000	100,000
Grand Etang, N.S.....	46,629	45,656
	20,363,856	6,956,884
INDUSTRIAL PARK FACILITIES—		
Point Edward, N.S.....	3,170,000	1,005,687
Dorchester, N.B.....	1,600,000	1,250,000
Burnside (Dartmouth), N.S.....	787,500	—
Stellarton, N.S.....	700,000	600,000
Lakeside, N.S.....	560,000	209,984
Saint John, N.B.....	450,000	222,656

<i>Project</i>	<i>Projects Approved</i>	<i>Cumulative Expenditure to Mar. 31, 1968</i>
	\$	\$
INDUSTRIAL PARK FACILITIES—concluded		
Moncton, N.B.....	400,000	88,039
Fredericton, N.B.....	400,000	—
Amherst, N.S.....	350,000	350,000
Truro, N.S.....	200,000	160,359
Summerside, P.E.I.....	118,327	118,020
Sydney, N.S.....	75,000	—
	<u>8,710,827</u>	<u>4,004,745</u>
RESEARCH FACILITIES—		
Financial assistance for new research laboratories, equipment, etc.—		
Halifax—Dartmouth, N.S.....	2,350,000	860,305
Dalhousie University Aquatron, N.S.....	2,000,000	—
Fredericton, N.B.....	1,887,179	1,448,539
University of New Brunswick, Fredericton, N.B.....	1,500,000	—
Provincial Department of Natural Resources, N.B.— geochemical laboratory.....	50,000	24,025
Nova Scotia Technical College, Halifax, N.S.....	50,000	—
	<u>7,837,179</u>	<u>2,332,869</u>
MISCELLANEOUS PROJECTS—		
Strait of Canso Development, N.S.....	4,395,000	—
Map and land registration.....	3,977,000	—
Bulk handling facilities at Dosco plant, Sydney, N.S.....	2,001,301	2,000,650
Abatement of industrial water pollution.....	2,000,000	19,897
Assistance to Nova Scotia for settling-in assistance to industry.....	1,200,000	—
Highway, Long Harbour to Argentia-Placentia area, Nfld.	1,000,000	304,085
Assistance toward construction of causeway, Pictou County, N.S.....	750,000	—
Confederation Centre, Charlottetown, P.E.I.....	600,000	277,000
Assistance in construction of basic services for food processing, Sussex, N.B.....	337,000	—
Port de Grave, Nfld.....	100,000	6,057
Boglands clearing, Burin Peninsula, Nfld.....	87,891	16,039
Provision of basic services, Dover Flour Mills, Halifax, N.S.	64,000	—
Repairs to marine railway, St. Anthony, Nfld.....	60,000	60,000
Causeway construction, Montague, P.E.I.....	40,000	40,000
Rail spur line, Summerside, P.E.I.....	32,000	—
Water pollution metering equipment.....	10,000	9,356
	<u>16,654,192</u>	<u>2,733,084</u>
SUNDRY EXPENDITURE.....	15,000	14,374
TOTALS.....	<u>124,668,854</u>	<u>72,697,086</u>

In addition, the following technical and economic surveys and studies were undertaken, financed by Parliamentary appropriations:—

<i>Survey or Study</i>	<i>Cumulative Expenditure to Mar. 31, 1968</i>
	\$
Study of demand for and supply of water resources in Newfoundland and Labrador.....	428,792
Study of demand for and supply of water resources in Nova Scotia, New Brunswick and Prince Edward Island.....	418,189
Study of tourist industry in Newfoundland, New Brunswick and Nova Scotia	366,707
Study of structure and function of urban centres in Atlantic Provinces.....	148,929
Study of water supplies in Alder Point, Isle Madame-St. Peters, Cape Sable Island and Digby Neck, N.S.....	112,657
Study of the comparative advantage of agricultural enterprises in Nova Scotia, New Brunswick and Prince Edward Island.....	58,200
Study of the effects of the Northumberland Strait Causeway upon Prince Edward Island.....	34,178
Study of water supplies in Charlotte County and Caraquet areas of New Brunswick.....	119,569

<i>Survey or Study</i>	<i>Cumulative Expenditure to Mar. 31, 1963</i>
Study of legal framework respecting water resources in Atlantic Provinces..	32,132
Layout and design of proposed waterfront industrial park at site of former Point Edward Naval Base, Cape Breton, N.S.....	36,989
Evaluation of the study of the water resources of the Atlantic Provinces....	27,408
Study of administrative framework of water resources in Atlantic Provinces	19,961
Study of water supplies and needs in the St. Mary's Bay area, Newfoundland	17,988
Survey of water resources of North Rustico, Prince Edward Island.....	22,830
Study of ground water resources in Nova Scotia.....	26,500
Comprehensive study of forestry in the Atlantic Provinces.....	46,303
Updating of input and output study.....	12,142
Development plan for Ernest Harmon Air Base, Stephenville, Nfld.....	40,000
Study of potential industrial sites in Halifax area.....	20,000
Study of industrial park needs of metropolitan area of St. John's, Nfld.....	25,000
Periodic reports by Atlantic Provinces Economic Council.....	8,750
Study of evaluation of industrial potential of Newport plan.....	8,469
Study of Saint John Harbour Bridge Throughway complex.....	8,014
Study of education as a factor in the growth of Atlantic Provinces.....	24,840
Survey of water supplies at Witless Bay, Nfld.....	6,211
Study of special problems and proposals.....	14,437
Study of marketing possibilities for Sydney steel.....	5,000
Study of the economics of the fishing industry in the Atlantic Provinces.....	5,000
Study of social strategy for economic development.....	10,000
Agriculture land mapping project.....	5,000
Study of the structure of the economy of the Atlantic region.....	9,261
Study of agriculture in Atlantic Provinces.....	16,461
Office services.....	5,680
Preliminary review of the tourist industry in Newfoundland.....	8,000
Investigation of water supplies to fish processing plants and water resources survey at Trepassey, Nfld.....	118,870
Investigation of water supply in Bay St. George, Stephenville, Nfld.....	40,000
Economic survey of Bell Island, Nfld.....	26,661
Study of water supplies and needs in Placentia, Nfld.....	19,501
Study of water resources in New Brunswick.....	21,163
Study of potash exploration in Nova Scotia.....	265,801
Investigation for a possible power site at Minas Basin, Bay of Fundy.....	70,000
Study of barriers to manpower mobility in economically lagging areas of Newfoundland, Labrador, Nova Scotia, New Brunswick and Quebec (cost shared with Departments of Manpower and Immigration and of Forestry and Rural Development).....	35,000
Industrial opportunities study in Cape Breton, N.S.....	32,000
Study and investigation of purification of salt water for use in fish processing plants.....	19,947
Study of industrial park needs of Edmundston, N.B.....	15,000
Marketing study of selected steel products of Sydney, N.S.....	12,776
Study of industrial park needs at various centres in New Brunswick and Nova Scotia.....	55,000
Study of industrial park needs in Charlottetown, P.E.I.....	10,000
Study of manufacturing opportunities in the Atlantic region.....	7,700
Study of inter-industry flow of goods and services in Atlantic Provinces..	105,000
Public information consultant services.....	6,070
Study of development of Newfoundland economy since Confederation.....	7,000
Study of demand and supply for land in Atlantic Provinces.....	50,000
Engineering investigations for deep water harbour, ore dock and ancillary facilities at Belledune Point, N.B. (cost shared with Department of Public Works).....	86,253
Study of transatlantic container shipping operations from ports of Halifax, N.S., and Saint John, N.B.....	23,976
Economic study of grain trade via Atlantic ports.....	25,000
Consultants' services re power and natural resources.....	47,205
Water supply study at Come-by-Chance, Nfld.....	12,800
Study of waste products of food and beverage industries in Atlantic Pro- vinces.....	9,600
Beneficiation research program on Wabana iron ore, Bell Island, Nfld.....	300,000
Foundation investigations for tidal power development in Upper Bay of Fundy, N.B.....	100,000
Engineering investigation of suitable water supply system for fishing plant at Shippegan, N.B.....	11,310
Industrial location study.....	5,841
Engineering and economic feasibility studies re submarine cable between Prince Edward Island and mainland.....	10,000
Preliminary study of economic aspects of effects on Atlantic ports of water navigation in St. Lawrence River and Gulf of St. Lawrence.....	10,000
Economics data, reports and statistics.....	5,000
Sundry projects for less than \$5,000 each.....	57,082
TOTAL.....	3,771,153

Subsection 3.—The Cape Breton Development Corporation

The Cape Breton Development Corporation was created by an Act of Parliament, assented to on July 7, 1967 (SC 1967-68, c. 6) and came into existence by proclamation on Oct. 1, 1967, as a proprietary Crown corporation. The Corporation was established to promote and assist the financing and development of industry on the Island and to provide employment outside the coal producing industry to broaden the base of the economy of the Island.

The Corporation has acquired the former interests of the major coal producer in the Sydney coalfield and, in accordance with its approved plan as required by Sect. 17 of the Act, is operating and reorganizing four mines with a view to the rationalization of coal production.

The Act provides for a board of directors, comprised of a chairman, a president and five other directors. Head office is located in Sydney, N.S. The Corporation now reports to Parliament through the Minister of Regional Economic Expansion. Its operations are financed by the Government of Canada with some assistance from the Government of Nova Scotia for industrial development projects. During 1968, approximately \$30,000,000 was expended for all purposes.

Subsection 4.—Provincial Government Economic Planning Agencies

In a number of provinces, economic planning agencies have been set up or are in the formative stage. Only those that are currently active are described here.

The Nova Scotia Voluntary Planning Organization

During late 1961 and early 1962, the Government of the Province of Nova Scotia concluded that, within its limitations as a provincial government and in keeping with democratic traditions, it could increase the rate of economic growth by undertaking an economic planning program of a voluntary nature. Legislation creating the Voluntary Planning Board was passed in March 1963 by a unanimous vote of the Legislature. The Act stipulates that the Board shall consist of a chairman and a vice-chairman, the number of additional members and their terms of office to be determined by Order in Council. The Act also provides for the appointment of Sector and Segment Committees chosen from appropriate occupations by the Lieutenant-Governor in Council. A Sector is defined as "a primary portion or division of the economy" and a Segment is "a part or sub-division of a sector".

The general function of the Board is to assist and advise the Minister in the development and implementation of measures to increase the rate of economic growth of the province by means of voluntary economic planning. The specific duties outlined in the Act are to:—

- (a) co-ordinate the plans of the various Sectors of the economy and, based on these plans, produce a plan for the whole economy of the province for recommendation to the Minister as one which the Government might adopt;
- (b) collect, collate and disseminate information relative to the economy of the province;
- (c) advise the Government on provincial economic matters;
- (d) watch the performance of the Sectors in carrying out their plans and stimulate and encourage the carrying out of such plans;
- (e) envisage further plans that should be made and provide for continuity of planning for the future, both short- and long-range; and
- (f) conduct or arrange to be conducted such studies and investigations as the Lieutenant-Governor in Council or the Minister requests.

In addition, the Board serves as a liaison between government and people in all economic endeavours.

The Board in 1966 published a comprehensive over-all plan for the Nova Scotia economy to 1968 which includes the aims of economic planning and objectives for the first planning period. In 1967 and 1968 it published an annual report and economic review which set out, to the extent possible, an assessment of the economy of the province in relation to the targets that were established in the over-all plan. Detailed Sector plans have been published for agriculture, forestry, tourism, transportation and communications, fisheries, mining and construction. A special study has been made for the service industries and other studies have been undertaken in conjunction with various Sector plans and the over-all plan, including the publication of an econometric model of Nova Scotia and a management education survey.

Quebec Planning Bureau

The Government of the Province of Quebec in July 1968 passed legislation to come into effect on Oct. 9 of the same year providing for the establishment of a Quebec Planning Bureau within the Department of the Executive Council. This Bureau is successor to the Quebec Economic Advisory Council which operated since 1960 as a transitional body pending the setting up of a planning system suited to the needs of the province.

The Bureau consists of a general manager and a secretary appointed by the Lieutenant-Governor in Council and such other functionaries and employees as are considered necessary. The functions of the Bureau are (1) to prepare plans, programs and projects for economic, social and territorial development with a view to better utilization of the economic and human resources of the province; (2) to obtain from government departments and bodies useful and necessary information respecting their policies, programs, projects and achievements; (3) to conduct or cause to be conducted the research, studies, inquiries and inventories required for its purposes and to co-ordinate such activities conducted by other government departments and bodies; and (4) to advise the government on policies and programs prepared by government departments and bodies and make recommendations respecting its own research activities.

An Interdepartmental Planning Commission and a Quebec Planning Council will act as advisers to the Bureau on matters submitted to them by that body.

The Ontario Economic Council

The Ontario Economic Council was formed initially by Order in Council on Feb. 1, 1962, and established by An Act to Establish the Ontario Economic Council, on May 30, 1968. The Council was conceived as a vehicle where representatives of agriculture, organized labour, commerce and industry, education, finance and of government could pool their knowledge and experience of economic affairs, commission research and formulate policy recommendations to the public and private sectors.

Nineteen Ontario citizens serve as members of the Council. Five of these represent a broad cross-section of business and industry; one each the financial community and the Consumers' Association of Canada; three, organized labour; three, agriculture; one, the provincial universities; and one, municipal government. One member comes from the senior ranks of the Ontario Civil Service. The remaining four are drawn from the Ontario Research Foundation, The Ontario Regional Development Council, The Hydro-Electric Power Commission of Ontario, and the Ontario Northland Railway. Each serves without compensation for a term of one, two or three years. The Council meets monthly in Toronto.

Essentially, the Council operates as an advisory body to the Government of Ontario. Some of its findings are reported directly to the government and other reports and recommendations are published and distributed widely. Recent reports cover the fields of transfer taxation, education, labour, skill-training and plant location. Also published annually is an index of research projects carried on within provincial government agencies and departments and certain industrial companies operating in Ontario.

The Council shares the view of the Government of Ontario that the economy of Ontario is not an entity separate from Canada. For this reason the Council does not undertake

separately for Ontario what the Economic Council of Canada has done and is doing for Canada as a whole. Projects are undertaken with the Economic Council of Canada on a co-operative basis and information is exchanged between the two Councils. Another way in which the Ontario Economic Council pursues its responsibilities is through the work of *ad hoc* committees which involve a broad cross-section of the Ontario community.

A small permanent Council staff undertakes direct assignments and superintends the design and administration of projects assigned to others. Close contact with government departments avoids unnecessary duplication of effort. Research facilities, academic personnel and graduate students in Ontario universities have been used for certain projects which have included the professional services of members of the departments of economics, political science, geography and business administration in provincial universities. From time to time the Council engages the professional services of private consulting firms.

The Manitoba Economic Consultative Board

The Manitoba Economic Consultative Board was established under the provisions of the Development Authority Act, 1963, and has been operative since the autumn of that year. It is composed of a chairman and 10 members appointed by the Lieutenant-Governor in Council and is representative of the leading elements of the labour and business community. Chairmen of the Manitoba Design Institute, the Manitoba Research Council and the Manitoba Export Corporation serve in an *ex officio* capacity. The Board obtains its funds from the Manitoba Government: its budget in 1967-68 was about \$130,000.

The Board was established as an advisory body to the Manitoba Development Authority, the economic planning and co-ordinating committee of the Executive Council. It is charged with examining Manitoba's long-term prospects for growth, a report on which is published annually and widely distributed. Its staff is involved in a continuing program of research into long-term economic problems.

Consultation with governments, management, agriculture and labour on obstacles to more rapid growth is an integral part of the Board's task. Thus, working with various management groups in the province, the provision of adequate management education programs was examined recently. This led to the formation of the Manitoba Institute of Management Inc., a non-profit private corporation representative of management, educators, labour and government, to provide broad community support for a greatly strengthened program of management education in the province.

Whenever possible the Board co-operates with other provincial councils and with the Economic Council of Canada. During the summer of 1967 the Board, in co-operation with the Dominion Bureau of Statistics, sponsored a national seminar on input-output analysis. During 1968, the Board published an input-output table of the Manitoba economy.

CHAPTER XXV.—BANKING, OTHER COMMERCIAL FINANCE AND INSURANCE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

PART I.—BANKING AND OTHER COMMERCIAL FINANCE

Section 1.—Banking

Subsection 1.—The Bank of Canada*

Canada's central bank, the Bank of Canada, began operations on Mar. 11, 1935, under the terms of the Bank of Canada Act of 1934 which charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it specific powers for discharging this responsibility. Through the exercise of these powers, the Bank broadly determines the combined total of the most common forms of Canadian money held by the community—chartered bank deposits and currency. The 1967 revision of the Bank of Canada Act contained a number of technical amendments designed to assist the Bank in discharging its responsibilities and account is taken of these changes in the following description of the Bank's operations.

The provisions of the Bank of Canada Act enable the central bank to determine the total amount of cash reserves available to the chartered banks as a group and thus to control the rate of expansion of the total assets and deposit liabilities of the banking system

* Revised (March 1969) by the Research Department of the Bank of Canada.

as a whole. The Bank Act, which regulates the operation of the chartered banks, requires that each chartered bank maintain a stipulated minimum average amount of cash reserves, calculated as a percentage of its Canadian dollar deposit liabilities, in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. (The minimum cash reserve requirement, which came into effect under the new legislation beginning Feb. 1, 1968, is 12 p.c. of demand deposits and 4 p.c. of other deposits.) The ability of the chartered banks as a group to expand their total assets and deposit liabilities is therefore limited by the total amount of cash reserves available. An increase in cash reserves will encourage the banks as a group to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in their deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada alters the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in the cash reserves of the chartered banks and requires them to reduce their holdings of assets and deposit liabilities.

The influence that the Bank of Canada exerts on credit conditions (i.e., on the interest cost and other terms of borrowing in financial markets) stems from its ability to limit the growth of bank credit and of the community's holdings of bank deposits and currency. The growth rate of the banking system is one of the factors exerting an important influence on the level of interest rates and other terms of access to credit prevailing in financial markets generally. Current credit conditions (and expectations about future trends in such conditions) in turn have an influence on business and household decisions to spend or to save. Many other factors also have an important effect on spending decisions, however, and the behaviour of the economy is subject as well to such influences as economic and financial developments abroad; the investment, price and wage policies of business firms in Canada; and the character of public policies at all levels of government with regard to expenditure and taxation. In using the powers at its disposal, the Bank attempts to help bring about credit conditions appropriate to both domestic and external conditions. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing prospects for the economy as reflected in the complex pattern of economic and financial developments.

In a technical sense, the powers which the central bank possesses allow it to exert a strong influence over economic activity but, in practice, the range through which credit conditions can be permitted to vary is necessarily limited. Changes in credit conditions in Canada affect the position of some groups in the economy much more than that of others, and this uneven impact is bound to inhibit the central bank's operations. Furthermore, interest rates in Canada cannot change greatly in relation to those abroad without producing large capital movements which might complicate Canada's international payments position. These considerations suggest that monetary policy must be used in appropriate combination with other public economic policies in order to help achieve national economic goals.

Although the Bank of Canada has the power to determine the rate of growth of the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. This depends entirely on the preferences of the public, since bank deposits can be converted freely into notes and coin and back again.

Although the cash reserve system in Canada—which is similar to that in a number of other countries—enables the central bank to determine within broad limits the total amount of chartered bank assets and deposit liabilities, the Bank of Canada leaves the allocation of bank and other forms of credit to the private sector of the economy. Each

chartered bank is free to attempt to gain as large a share as possible of the total cash reserves available by competing for deposits and to decide what proportion of its funds to invest in particular kinds of securities and in loans to particular types of borrowers. The influence of the central bank—based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities—is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are contained in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938, 1954 and 1967. Some of these powers are outlined below.

The Bank may buy or sell securities issued or guaranteed by Canada or any province, short-term securities issued by Britain, treasury bills or other obligations of the United States and certain types of short-term commercial paper. The Industrial Development Bank Act authorizes the Bank to purchase securities issued by that institution. The Bank may buy or sell gold, silver, nickel and bronze coin, or any other coin, and gold and silver bullion as well as foreign exchange and may accept non-interest-bearing deposits from the Government of Canada, the government of any province, any chartered bank and any bank regulated by the Quebec Savings Bank Act. The Bank may open accounts in other central banks. It may accept deposits from other central banks, the International Monetary Fund, the International Bank for Reconstruction and Development, and any other official international financial organization, and it may pay interest on such deposits. The Bank does not accept deposits from individuals nor does it compete with the chartered banks in the commercial banking field. The Bank acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada. The sole right to issue paper money for circulation in Canada is vested in the Bank.

The Bank of Canada may require the chartered banks to maintain, in addition to the legal minimum cash reserve requirement mentioned above, a secondary reserve which the Bank may vary within certain limits. The secondary reserve, which consists of cash reserves in excess of the minimum requirement, treasury bills and day-to-day loans to investment dealers, cannot be more than 6 p.c. of total deposits when first introduced nor can it exceed 12 p.c.; effective April 1968, the required level was 7 p.c. In the event the Bank wishes to introduce or increase the secondary reserve requirement, one month's notice to the chartered banks is required; the amount of any increase in the requirement cannot exceed 1 p.c. per month. In the case of a lowering of the secondary reserve requirement, however, the percentage change in any one month is not restricted.

The Bank of Canada may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge of certain classes of securities. Loans or advances may be made under certain conditions and for limited periods to the Government of Canada or of any province. The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. From Nov. 1, 1956 until June 24, 1962, the Bank Rate was established weekly at a fixed margin of $\frac{1}{4}$ of 1 p.c. above the latest weekly average tender rate for 91-day treasury bills. Since June 24, 1962, the Bank Rate has been fixed from time to time as follows:—

<i>Date of Change</i>	<i>Per Cent per Annum</i>	<i>Date of Change</i>	<i>Per Cent per Annum</i>
June 24, 1962.....	6.00	Apr. 7, 1967.....	4.50
Sept. 7, 1962.....	5.50	Sept. 27, 1967.....	5.00
Oct. 12, 1962.....	5.00	Nov. 20, 1967.....	6.00
Nov. 13, 1962.....	4.00	Jan. 22, 1968.....	7.00
May 6, 1963.....	3.50	Mar. 15, 1968.....	7.50
Aug. 12, 1963.....	4.00	July 2, 1968.....	7.00
Nov. 24, 1964.....	4.25	July 29, 1968.....	6.50
Dec. 6, 1965.....	4.75	Sept. 3, 1968.....	6.00
Nov. 14, 1966.....	5.25	Dec. 18, 1968.....	6.50
Jan. 30, 1967.....	5.00	Mar. 3, 1969.....	7.00

Since June 24, 1962, the Money Market Rate—the rate at which the Bank of Canada is prepared to enter into purchase and resale agreements with money-market dealers—has been either $\frac{1}{2}$ of 1 p.c. above the average rate on 91-day treasury bills at the preceding weekly tender or the Bank Rate, whichever is lower.

The Bank of Canada is not required to maintain gold or foreign exchange reserves against its liabilities.

Prior to the 1967 amendment of the Bank of Canada Act, there existed some uncertainty about the exact relationship between the central bank and the Government. The changes in the Bank of Canada Act in 1967 were designed to clarify this matter. They provide for regular consultation between the Governor of the Bank and the Minister of Finance as well as for a formal procedure whereby, in the event of a disagreement between the Government and the Bank which cannot be resolved, the Government may, after further consultation has taken place, issue a directive to the Bank as to the monetary policy that it is to follow. Any such directive must be in writing, it must be in specific terms, and it must be applicable for a specified period. It must be published immediately in the *Canada Gazette* and tabled in Parliament. The amendment makes it clear that the Government must take the ultimate responsibility for monetary policy and it provides a mechanism for that purpose but the central bank is in no way relieved of its responsibility for monetary policy and its execution.

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1964-68

Item	1964	1965	1966	1967	1968
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Assets					
Foreign exchange.....	97.6	28.3	55.2	90.9	95.9
Advances to chartered and savings banks.....	—	—	—	3.0	5.0
Investments—					
Treasury bills of Canada.....	478.7	608.1	409.1	538.3	453.4
Other securities issued or guaranteed by Canada maturing within 3 years.....	530.9	815.8	1,142.9	1,269.7	1,540.9
Other securities issued or guaranteed by Canada not maturing within 3 years.....	2,054.8	1,992.7	1,867.2	1,940.1	1,890.3
Bonds and debentures issued by Industrial Development Bank.....	176.5	200.7	239.8	270.2	305.0
Other securities.....	13.4	14.0	171.7	10.7	10.8
Industrial Development Bank capital stock.....	36.0	39.0	42.0	45.0	49.0
Bank premises.....	13.2	16.3	16.5	17.3	22.2
All other assets.....	240.8	240.9	262.3	226.3	263.1
Totals, Assets.....	3,641.9	3,955.8	4,206.8	4,411.6	4,635.6
Liabilities					
Capital paid up.....	5.0	5.0	5.0	5.0	5.0
Reserve Fund.....	25.0	25.0	25.0	25.0	25.0
Notes in Circulation—					
Held by chartered banks.....	355.1	382.7	438.1	484.6	568.9
All other.....	2,025.5	2,152.9	2,295.5	2,494.4	2,660.3
Deposits—					
Government of Canada.....	68.9	116.2	34.1	42.2	47.4
Chartered banks.....	882.1	1,034.2	1,111.3	1,062.0	1,114.3
Other.....	35.6	34.5	29.7	37.9	38.4
Foreign currency liabilities.....	44.9	30.8	36.9	34.8	28.3
All other liabilities.....	199.8	174.3	231.2	225.8	147.9
Totals, Liabilities.....	3,641.9	3,955.8	4,206.8	4,411.6	4,635.6

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, two Directors and the Deputy Minister of Finance (who is without a vote); this Committee has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown.

The Industrial Development Bank.—The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:—

To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises.

The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada and the Deputy Minister of Industry, Trade and Commerce. The authorized capital of the Bank is \$75,000,000 and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed ten times the aggregate of the Bank's paid-up capital and Reserve Fund.

The Bank may extend financial assistance to industrial enterprises in Canada which, by definition in the Act, include any industry, trade or other business undertaking of any kind. With respect to such enterprises, the Bank is empowered to lend money or guarantee loans and where an enterprise is a corporation the Bank may also enter into underwriting agreements with regard to any issue of stock, bonds or debentures; acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank has entered into an underwriting agreement; and acquire certificates issued by a trustee to finance the purchase of transportation equipment. The total amount of commitments of the Bank, in the form of loans, guarantees, etc., in excess of \$200,000 each, may not exceed \$200,000,000.

The Bank may accept any form of collateral security against its advances, including realty and chattel mortgages which constitute the usual kind of security taken. The Bank is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of Incorporation provides that it should extend credit only when, in the Bank's opinion, credit or other financial resources would not otherwise be available on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has branch offices in the following cities: St. John's, Halifax, Saint John, Moncton, Rimouski, Quebec, Trois-Rivières, Montreal, Sherbrooke, Ottawa, Toronto, Hamilton, Waterloo, London, Windsor, Sudbury, Fort William, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Kelowna, Vancouver, Victoria and Prince George.

2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1964-68

Item	1964	1965	1966	1967	1968
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Assets—					
Loans outstanding ^{1,2}	224.3 ^r	255.1	298.2 ^r	334.3 ^r	370.9
Other assets.....	5.1 ^r	6.9	6.9 ^r	6.5 ^r	8.0
Totals, Assets.	229.4	262.0	305.1	340.8	378.9
Liabilities—					
Capital and reserves.....	57.0	61.7	66.2	71.1	76.1
Bonds and debentures outstanding.....	168.1	195.4	232.8	262.5	293.6
Other liabilities.....	4.3	4.9	6.1	7.2	9.2
Totals, Liabilities.	229.4	262.0	305.1	340.8	378.9
Loan Transactions—					
Disbursements ¹	69.5	81.1	98.1	96.6 ^r	105.5
Repayments ¹	46.2	50.2	55.2	61.1	69.7
Loans outstanding plus undistributed authorizations ¹	264.2	297.8	350.6	388.6	427.0
	No.	No.	No.	No.	No.
Customers on books.....	6,028	6,962	7,870	8,595	9,511

¹ Includes investments: the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.

² Includes agreements of sale.

Subsection 2.—Currency

Note Circulation.—The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves. The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

3.—Bank of Canada Note Liabilities, as at Dec. 31, 1964-68

Denomination	1964	1965	1966	1967	1968
	\$'000	\$'000	\$'000	\$'000	\$'000
Bank of Canada Notes—					
\$1.....	97,742	103,115	109,846	129,473	136,753
\$2.....	68,768	73,328	78,874	84,513	91,188
\$5.....	172,752	183,057	196,893	209,392	223,350
\$10.....	574,516	608,351	668,153	692,823	733,695
\$20.....	841,002	904,872	983,765	1,110,604	1,230,585
\$25.....	46	46	46	46	46
\$50.....	163,419	173,580	183,131	203,239	218,300
\$100.....	429,093	453,687	471,550	508,068	549,923
\$500.....	34	33	33	33	32
\$1,000.....	20,181	22,597	23,377	27,805	32,412
Totals.....	2,367,553	2,522,666	2,720,668	2,965,996	3,216,284
Note issues in process of retirement¹.....	13,006	12,984	12,966	12,944	12,927
Totals, Bank of Canada Note Liabilities..	2,380,559	2,535,650	2,733,634	2,978,940	3,229,211
Held by—					
Chartered banks.....	355,086	382,703	438,090	484,566	568,923
Others.....	2,025,473	2,152,947	2,295,544	2,494,374	2,660,288

¹ Includes, in 1968, chartered banks' notes \$8,175,000, Dominion of Canada notes \$4,636,000, provincial notes \$28,000 and defunct banks' notes \$38,000; these amounts have changed little in recent years.

4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1959-68

As at Dec. 31—	Bank of Canada Notes ¹	Per Capita ²	As at Dec. 31—	Bank of Canada Notes ¹	Per Capita ²
	\$	\$		\$	\$
1959.....	1,704,822,198	97.51	1964.....	2,025,473,300	105.00
1960.....	1,731,902,386	96.92	1965.....	2,152,947,110	109.60
1961.....	1,800,190,122	98.71	1966.....	2,295,543,656	114.69
1962.....	1,816,977,132	97.78	1967.....	2,494,373,617	122.24
1963.....	1,886,238,792	99.64	1968.....	2,660,288,295	128.24

¹ Total issue less notes held by chartered banks.

² Based on official estimates of population (see p. 185).

Coinage.*—Under an amendment to the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), assented to Mar. 7, 1968, gold coins may be issued in the denomination of twenty dollars (nine tenths fine or millesimal fineness 900): subsidiary coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (five tenths fine or millesimal fineness 500, or pure nickel): pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in the event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchange Fund Act for the payment of any amount: in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

* Revised by the Master of the Royal Canadian Mint, Ottawa.

5.—Canadian Coin in Circulation, as at Dec. 31, 1958-67

NOTE.—The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

As at Dec. 31—	Silver	Nickel	Tombac ¹	Steel	Bronze	Total	Per Capita
	\$	\$	\$	\$	\$	\$	\$
1958.....	115,120,076	9,289,481	549,630	3,455,062	15,322,156	143,736,405	8.42
1959.....	123,344,059	9,865,012	549,237	3,454,209	16,150,222	153,362,739	8.77
1960.....	136,710,958	11,599,263	549,090	3,452,876	16,895,953	169,208,140	9.47
1961.....	146,902,352	14,110,198	549,021	3,451,708	18,311,853	183,325,132	10.05
1962.....	162,928,707	16,433,088	549,009	3,450,676	20,595,543	203,957,023	10.98
1963.....	180,492,972	18,627,687	548,999	3,449,476	23,383,788	226,502,922	11.99
1964.....	206,551,965	22,522,116	548,996	3,448,547	28,009,356	261,080,980	13.57
1965.....	239,927,246	26,397,784	548,989	3,447,516	30,968,064	301,289,599	15.39
1966.....	263,556,870	27,052,019	548,987	3,446,704	33,106,994	327,711,574	16.37
1967.....	290,767,343	29,994,420	548,986	3,445,905	36,556,981	361,813,635	17.51

¹ Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

The Royal Canadian Mint.—The Ottawa Mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, was opened on Jan. 2, 1908. On Dec. 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. Under the provisions of the Government Organization Act, 1969, the Mint was established as a Crown (agency) corporation, reporting to Parliament through the Minister of Supply and Services. The latter change was designed to provide for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and precious metals; and producing medals, plaques and other devices.

The Master of the Mint is its chief executive officer and one of a Board of seven Directors appointed by the Governor in Council. The Master of the Mint is appointed to hold office during pleasure, the Chairman of the Board is appointed for a term of four years subject to re-appointment, and the other five Directors for terms of one to three years.

Financial and budgeting arrangements are similar to those of other Crown companies carrying on industrial or commercial operations. Loans are made from the Consolidated Revenue Fund for operating and capital expenses, with the total outstanding at any time limited to \$35,000,000. Provision is made for loans for temporary purposes and a reserve is established against losses. Operations are conducted with the aim of making a small profit.

6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1958-67

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	\$	\$	\$
1958.....	3,958,459	4,088,706	8,044,753	379,616	578,274
1959.....	3,908,640	3,836,680	8,273,563	576,680	829,116
1960.....	4,024,626	4,014,771	13,432,251	1,735,707	748,101
1961.....	3,800,137	3,812,054	10,299,581	2,512,369	1,417,544
1962.....	3,488,974	3,520,406	16,114,240	2,324,212	2,284,925
1963.....	3,457,092	3,467,554	17,688,668	2,196,217	2,790,679
1964.....	3,188,868	3,173,573	26,153,154	3,895,746	4,626,963
1965.....	2,991,450	3,026,974	33,479,378	3,877,921	2,961,126
1966.....	2,676,402	2,631,400	23,722,162	655,948	2,140,711
1967.....	2,438,512	2,287,687	27,322,321	2,944,242	3,451,406

Dollar Currency and Bank Deposits.—Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 7.

7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1959-68
(Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits ¹		
	Notes	Coin	Total	Personal Savings Deposits	Government of Canada Deposits	Other Deposits ¹	Total ¹	Total Including Government Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits
1959.....	1,705	128	1,832	6,900	404	4,057	11,360	13,193	12,789	5,890
1960.....	1,732	144	1,876	7,215	510	4,313	12,037	13,914	13,404	6,189
1961.....	1,800	158	1,959	7,618	588	4,998	13,205	15,163	14,575	6,957
1962.....	1,817	177	1,994	7,932	564	5,193	13,689	15,683	15,119	7,187
1963.....	1,886	198	2,084	8,443	914	5,623	14,980	17,064	16,150	7,707
1964.....	2,025	229	2,254	8,935	696	6,164	15,795	18,049	17,353	8,418
1965.....	2,153	266	2,419	9,725	797	7,201	17,723	20,142	19,345	7,576
1966.....	2,296	293	2,589	10,248	919	7,741	18,908	21,497	20,578	10,330
1967.....	2,494	335	2,829	11,760	618	8,096	21,473	24,302	23,655	11,925
1968.....	2,660	399	3,059	13,622	669	10,507	24,798	27,857	27,188	13,566

¹ Less total float, i.e., cheques and other items in transit.

Subsection 3.—The Chartered Banks

Canada's commercial banking system consists of nine privately owned banks. Eight have been in operation for many years and one commenced operations in July 1968. At the end of December 1968, these banks operated 5,956 banking offices in Canada and 236 abroad. Canadian chartered banks engage in a very wide range of activities; they accept various types of deposits from the public including accounts payable on demand, both chequing and non-chequing, notice deposits and fixed-term deposits. The banks, in addition to holding a portfolio of securities, make loans under a wide variety of conditions for commercial, industrial, agricultural and consumer purposes. They also deal in foreign exchange, receive and pay out bank notes, provide safekeeping facilities and perform a variety of other services. For the most part, these operations are carried out in Canada by the extensive network of bank branches. The head offices of the banks confine their activities largely to general administration and policy-making functions, the management of the banks' investment portfolio and related matters. A detailed account of the branch banking system in Canada is given in the 1967 Year Book, pp. 1126-1128.

All banks operating in Canada are chartered (i.e., licensed) by Parliament under the terms of the Bank Act. The Act regulates certain internal aspects of bank operations such as the auditing of accounts, the issuing of stock, the setting aside of reserves and similar matters. In addition, the Bank Act regulates the banks' relationship with the public, the Government and the Bank of Canada.

It has been the practice in Canada to revise the Bank Act at approximately ten-year intervals. The most recent revision was enacted by Parliament early in 1967 and came into effect on May 1 of that year. The remainder of this subsection deals with the principal changes incorporated in the new Bank Act.

Acceptance by the Government of some of the main recommendations of the Royal Commission on Banking and Finance for increased competition and flexibility in the Canadian banking system was reflected in various new Bank Act provisions. These imposed certain restrictions on corporate and other relationships between banks and other financial

institutions, while removing certain existing restrictions on the banks' operations which had placed them at some competitive disadvantage in recent years compared with their principal financial competitors.

In the past, various forms of intercorporate financial relationship between chartered banks and other financial enterprises had developed in Canada. In some instances this involved investment by banks in the shares of these enterprises, and vice versa; in others the relationship involved interlocking directorships. These practices are severely restricted under the terms of the new Bank Act, which limits bank ownership of any Canadian corporation to 10 p.c. of the voting shares and also provides that no more than one fifth of the directors of any company may become directors of a bank. In addition, after a two-year period a director of a trust or mortgage loan company which accepts deposits from the public may not be appointed or elected a director of a bank. In order to ensure that competition is not curtailed by agreements among the banks on interest rates to be paid on deposits or charged for loans, the new Bank Act prohibits the making of such agreements (except with the consent of the Minister of Finance). At the same time the provision that was formerly in the Bank Act limiting to 6 p.c. the interest rate which chartered banks could charge on loans, was abolished effective Jan. 1, 1968. Under the new Bank Act, the determination of interest rates on loans and deposits is left to market forces.

The new Bank Act also granted the banks new mortgage-lending powers. Banks may now charge current rates of interest on mortgage loans under the National Housing Act, and they may also make conventional residential mortgage loans for the first time. In the case of conventional residential mortgages, the amount of an individual mortgage cannot exceed 75 p.c. of the appraised value of the property. After 1973 the maximum amount of a bank's assets to be held in the form of conventional residential mortgages must not be more than 10 p.c. of the bank's Canadian dollar deposit liabilities plus debentures. In the interval, the percentage limitation will rise by 1 p.c. each fiscal year; it was 4 p.c. until Oct. 31, 1968 when it rose to 5 p.c. for the subsequent fiscal year and will so continue until the 10-p.c. maximum is reached.

The banks have also been given authority to issue their own debentures with an original term to maturity of at least five years; such securities are not subject to a reserve requirement and rank in priority after deposit liabilities. The amount of debentures that any bank may have outstanding is limited by restricting the increase per annum to 10 p.c. of the paid-up capital and rest fund and an upper limit of one half of the bank's paid-up capital and rest fund.

The amendments to the Bank Act in 1967 contained a number of revisions respecting the ownership of Canadian chartered banks. No individual or associated shareholders may vote more than 10 p.c. of a bank's total shares outstanding and, if more than 25 p.c. of a bank's shares are owned by non-residents, the total outstanding liabilities of the bank may not exceed twenty times its authorized capital stock.

The Bank Act also stipulates the minimum statutory cash reserve requirement that the chartered banks must observe. The minimum amount of Bank of Canada notes and deposits each bank must hold as cash reserves was changed in a series of monthly steps from 8 p.c. of all Canadian dollar deposits under the old Bank Act to 12 p.c. of demand deposits and 4 p.c. of other deposits as of February 1968. In addition, the Bank of Canada has been given stand-by powers to require the banks to hold a "secondary reserve" which would consist of cash in excess of their statutory requirements, holdings of treasury bills and day-to-day loans to investment dealers. When initially introduced, this secondary reserve cannot exceed 6 p.c. of a bank's deposit liabilities. Thereafter it may be increased in monthly steps of 1 p.c. to a maximum of 12 p.c. The Bank of Canada may reduce or remove such a secondary reserve at any time. Effective April 1968, the required level was 7 p.c.

Branches of Chartered Banks.—Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from

34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—The Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amalgamation in 1955 of the Bank of Toronto and the Dominion Bank as The Toronto-Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 reduced this number to eight. The Bank of British Columbia was granted a charter by Parliament in December 1966 and commenced operations in July 1968, increasing the number of chartered banks to nine. The number of branches of chartered banks in each province periodically from 1920 to 1968 is given in Table 8.

8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1920-68

NOTE.—Figures include sub-agencies in Canada receiving deposits for the banks employing them; there were 745 such sub-agencies at Dec. 31, 1968.

Province or Territory	1920	1926	1930	1940	1950	1960	1962	1963	1964	1965	1966	1967	1968
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	—	—	—	—	39	71	81	88	90	104	107	106	111
Prince Edward Island....	41	28	28	25	23	27	27	26	26	29	29	29	29
Nova Scotia.....	169	134	138	134	144	173	178	180	183	189	189	192	195
New Brunswick.....	121	101	102	97	100	113	118	121	123	126	132	133	133
Quebec.....	1,150	1,072	1,183	1,083	1,164	1,427	1,489	1,515	1,539	1,580	1,604	1,604	1,674
Ontario.....	1,586	1,326	1,409	1,208	1,257	1,785	1,916	1,967	2,022	2,055	2,078	2,107	2,159
Manitoba.....	349	224	239	162	165	234	248	255	261	271	279	285	292
Saskatchewan.....	591	427	447	233	238	296	299	303	308	317	321	327	338
Alberta.....	424	269	304	172	246	394	417	431	445	457	462	472	485
British Columbia.....	242	186	229	192	294	514	545	546	563	580	588	606	622
Yukon and Northwest Territories.....	3	3	4	5	9	17	14	15	15	16	17	18	18
Canada.....	4,676	3,770	4,083	3,311	3,679	5,051	5,332	5,447	5,575	5,724	5,806	5,879	5,956

9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1968

NOTE.—This table includes 745 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	33	3	29	24	203	368
The Bank of Nova Scotia.....	43	9	54	40	73	298
Banque Canadienne Nationale.....	—	—	—	—	576	16
Banque Provinciale du Canada.....	—	2	—	19	281	24
Canadian Imperial Bank of Commerce.....	13	8	26	20	182	637
The Mercantile Bank of Canada.....	—	—	2	—	3	1
The Royal Bank of Canada.....	21	6	80	25	182	407
The Toronto-Dominion Bank.....	1	1	4	5	74	408
Bank of British Columbia.....	—	—	—	—	—	—
Totals.....	111	29	195	133	1,574	2,159
	Man.	Sask.	Alta.	B.C.	Y.T. and N.W.T.	Total
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	66	65	107	133	3	1,034
The Bank of Nova Scotia.....	25	36	69	78	1	726
Banque Canadienne Nationale.....	5	—	—	—	—	597
Banque Provinciale du Canada.....	—	—	—	—	—	326
Canadian Imperial Bank of Commerce.....	71	97	147	202	9	1,412
The Mercantile Bank of Canada.....	1	—	1	1	—	9
The Royal Bank of Canada.....	82	99	95	131	3	1,131
The Toronto-Dominion Bank.....	42	41	66	73	2	717
Bank of British Columbia.....	—	—	—	4	—	4
Totals.....	292	338	485	622	18	5,956

10.—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1968

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 47 in 1968.

Bank and Location	Number	Bank and Location	Number	Bank and Location	Number
Bank of Montreal	9	Canadian Imperial Bank of Commerce	34	The Royal Bank of Canada—concl.	6
Britain.....	2	Britain.....	2	Guyana.....	1
United States.....	1	United States.....	11	Haiti.....	1
Germany.....	6	Antigua.....	1	Jamaica.....	11
The Bank of Nova Scotia	50	Bahamas.....	3	Peru.....	1
Antigua.....	1	Barbados.....	1	Puerto Rico.....	6
Bahamas.....	6	Cayman Islands.....	1	Trinidad.....	11
Grenada.....	1	Grenada.....	1	Tobago.....	1
Trinidad.....	10	Jamaica.....	8	United States.....	1
Barbados.....	3	St. Vincent.....	1	Venezuela.....	6
Dominican Republic.....	4	Trinidad.....	5	West Indies.....	11
England.....	3	The Royal Bank of Canada	92	The Toronto-Dominion Bank	3
Scotland.....	1	Argentina.....	2	Britain.....	2
St. Lucia.....	2	Bahamas.....	6	United States.....	1
Puerto Rico.....	4	Brazil.....	3	Banque Canadienne Nationale	1
U.S. Virgin Islands.....	5	British Honduras.....	3	France.....	1
United States.....	2	Cayman Islands.....	1	Total	189
Lebanon.....	1	Colombia.....	5		
Netherlands.....	1	Dominican Republic.....	12		
Ireland.....	1	France.....	1		
British Virgin Islands.....	1	French West Indies.....	2		
Belgium.....	1	Britain.....	2		
British Honduras.....	1				
Cayman Islands.....	1				
Guyana.....	1				

Financial Statistics of Chartered Banks.—Chartered bank financial statistics for recent years are given in Tables 11-15; month-end data are available in the *Bank of Canada Statistical Summary*.

11.—Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1966-68

Assets and Liabilities	1966	1967	1968
	\$'000	\$'000	\$'000
Assets—			
Gold and coin in Canada.....	53,171	50,492	157,101
Gold and coin outside Canada.....	1,573	1,101	1,135
Notes of and deposits with Bank of Canada.....	1,549,348	1,546,584	1,683,250
Government and bank notes other than Canadian.....	61,805	59,076	70,330
Deposits with other banks in Canadian currency.....	16,042	14,067	35,968
Deposits with other banks in currencies other than Canadian.....	1,516,166	2,326,318	3,263,205
Cheques and other items in transit (net).....	1,017,076	1,018,925	1,411,206
Government of Canada treasury bills, at amortized value.....	1,547,861	1,725,128	2,123,784
Other Government of Canada direct and guaranteed securities maturing within three years, at amortized value.....	864,413 ¹	1,399,481	1,680,262
Government of Canada direct and guaranteed securities maturing after three years, at amortized value.....	1,473,002 ¹	1,504,573	1,760,987
Canadian provincial government direct and guaranteed securities, at amortized value.....	279,866	342,516	373,495
Canadian municipal and school corporation securities, not exceeding market value.....	327,202	347,557	366,440
Other Canadian securities, not exceeding market value.....	559,819	605,498	712,277
Securities other than Canadian, not exceeding market value.....	620,990	682,909	726,959
Mortgages and hypothecs insured under the National Housing Act 1954.....	782,584	748,529	830,990
Day-to-day, call and short loans to investment dealers and brokers in Canadian currency, secured.....	565,304	640,659	708,074
Day-to-day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured.....	877,659	743,757	710,640
Loans to Canadian provincial governments in Canadian currency.....	120,263	204,561	143,569
Loans to Canadian municipalities and school corporations in Canadian currency, less provision for estimated loss.....	627,173	603,180	692,245

¹ Before 1967, Government of Canada security holdings were classified as maturing within *two* or after *two* years.

11.—Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1966-68—concluded

Assets and Liabilities	1966	1967	1968
	\$'000	\$'000	\$'000
Assets—concluded			
Other current loans in Canadian currency, less provision for estimated loss	11,387,772	13,115,695	14,921,728
Other current loans in currencies other than Canadian, less provision for estimated loss	2,622,273	2,655,115	2,937,692
Non-current loans, less provision for estimated loss	1,564	331	331
Bank premises at cost, less amounts written off	315,110	331,633	353,959
Shares of and loans to corporations controlled by the bank	99,197	111,643	127,850
Customers' liability under acceptances, guarantees and letters of credit, as per contra	847,864	818,830	866,401
Other assets	14,853	40,785	39,270
Totals, Assets	28,149,950	31,648,612	36,698,817
Liabilities—			
Deposits by Government of Canada in Canadian currency	919,025	617,768	669,227
Deposits by Canadian provincial governments in Canadian currency	302,761	309,486	391,023
Deposits by other banks in Canadian currency	207,105	235,115	260,408
Deposits by other banks in currencies other than Canadian	1,271,010	1,528,584	2,134,287
Personal savings deposits payable after notice, in Canada, in Canadian currency	10,248,112	11,759,630	13,621,848
Other deposits payable after notice, in Canadian currency	2,345,663	3,255,088	4,049,649
Other deposits payable on demand, in Canadian currency	5,993,701	6,485,767	7,387,325
Other deposits in currencies other than Canadian	4,297,211	4,780,231	5,243,429
Advances from Bank of Canada	1	3,000	5,000
Acceptances, guarantees and letters of credit	847,864	818,830	866,401
Other liabilities	75,558	81,416	108,303
Accumulated appropriations for losses	376,528	424,058	561,610
Debentures issued and outstanding	1	40,000	40,000
Capital paid up	285,958	287,958	293,064
Rest account	963,700	1,009,900	1,062,050
Undivided profits at latest fiscal year-end	15,754	11,781	7,193
Totals, Liabilities	28,149,950	31,648,612	36,698,817

¹ Not included as a liability item before 1967.

12.—Canadian Cash Reserves, 1959-68

NOTE.—Bank of Canada deposits are averages of the juridical days in the month shown; Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month. Until June 1967 the required cash reserve ratio was 8 p.c. on both demand and notice deposits. For the next eight months the required minimum monthly average on demand deposits was increased by $\frac{1}{4}$ of 1 p.c. per month and that on notice deposits was decreased by $\frac{1}{4}$ of 1 p.c. Since February 1968 the required ratios have been 12 p.c. for demand deposits and 4 p.c. for notice deposits as prescribed under the Bank Act.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities	Average Cash Reserve Ratio
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1959	648	351	999	12,187	8.2
1960	625	360	985	12,052	8.2
1961	673	367	1,040	12,804	8.1
1962	748	376	1,124	13,812	8.1
1963	775	394	1,169	14,400	8.1
1964	857	407	1,263	15,598	8.1
1965	965	427	1,392	17,186	8.1
1966	1,057	449	1,506	18,607	8.1
1967	1,110	487	1,597	20,668	7.7
1968	965	525	1,490	23,314	6.4

13.—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Apr. 30, 1967 and 1968

Deposit Accounts of the Public of—	1967			1968		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
Less than \$100.....	7,020,355	1,584,482	8,604,837	7,285,447	1,663,866	8,949,313
\$100 or over but less than \$1,000	4,126,397	1,257,284	5,383,681	4,388,510	1,487,779	5,876,289
\$1,000 or over but less than \$10,000 ..	2,255,748	514,604	2,770,352	2,638,691	567,537	3,206,228
\$10,000 or over but less than \$100,000	146,079	99,559	245,638	182,432	110,160	292,592
\$100,000 or over.....	1,478	10,771	12,249	1,937	13,904	15,841
Totals, Deposits.....	13,550,057	3,466,700	17,016,757	14,497,017	3,843,246	18,340,263

14.—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1966-68

Class of Loan	1966	1967	1968
	\$'000,000	\$'000,000	\$'000,000
General Loans—			
Personal.....	3,056.2	3,589.7	4,327.8
To individuals, fully secured by marketable bonds and stocks.....	522.1	536.3	595.1
Home improvement loans.....	75.8	76.6	67.8
To individuals, not elsewhere classified.....	2,458.3	2,976.7	3,665.0
Farmers—			
Farm Improvement Loans Act.....	399.1	432.6	313.8
Other farm loans.....	507.1	589.6	716.2
Industry.....	2,553.9	2,995.2	3,067.1
Chemical and rubber products.....	153.0	171.2	217.3
Electrical apparatus and supplies.....	171.0	258.5	259.8
Foods, beverages and tobacco.....	474.7	503.9	507.6
Forest products.....	306.2	346.2	303.2
Furniture.....	45.0	48.8	55.4
Iron and steel products.....	362.5	391.1	406.9
Mining and mine products.....	165.4	263.4	239.1
Petroleum and products.....	191.1	265.5	338.3
Textiles, leather and clothing.....	300.6	267.1	273.2
Transportation equipment.....	199.8	292.7	249.1
Other products.....	184.7	186.6	217.3
Merchandisers.....	1,266.0	1,288.4	1,443.7
Construction contractors.....	461.9	461.6	513.9
Public utilities, transportation and communications.....	352.5	471.1	590.2
Other business.....	1,536.8	1,702.2	1,952.4
Religious, educational, health and welfare institutions.....	321.4	301.2	293.1
Totals, General Loans.....	10,454.8	11,831.6	13,218.2
Other Loans—			
Provincial governments.....	101.4	204.6	143.6
Municipal governments and school districts.....	627.2	603.2	692.2
Stockbrokers.....	102.9	103.2	171.8
Investment dealers.....	188.2	231.7	343.2
Loans to finance the purchase of Canada Savings Bonds.....	227.6	222.3	231.3
Grain dealers and exporters.....	272.3	539.3	832.5
Instalment and other financial companies.....	434.6	431.8	427.8
Totals, Other Loans.....	1,954.2	2,336.0	2,842.4
Grand Totals, Loans in Canadian Currency.....	12,409.0	14,167.5	16,060.6

15.—Chartered Bank Revenues, Expenses, Shareholders' Equity and Accumulated Appropriations for Losses, as at Oct. 31, 1966-68

NOTE.—All banks end their financial years on Oct. 31.

Item	1966	1967	1968
	\$'000,000	\$'000,000	\$'000,000
FOR FINANCIAL YEAR ENDED OCT. 31			
Revenues—			
Income from loans.....	1,042.8	1,172.6	1,541.1
Income from securities ¹	265.4	305.9	396.4
Other operating income.....	187.8	237.1	271.7
Totals, Revenues.....	1,496.0	1,715.7	2,209.2
Expenses—			
Interest on deposits and bank debentures.....	630.8	741.9	1,031.7
Salaries, premiums, contributions and other staff benefits.....	380.1	426.1	486.8
Property expenses, including depreciation.....	107.1	116.6	131.8
Other operating expenses ²	134.7	155.5	177.9
Totals, Expenses³.....	1,252.7	1,440.0	1,828.2
Balance of Revenue ⁴	243.3	275.7	381.0
Less:			
Loss experience not included in other operating expenses.....	21.8	-3.3	-10.1
Appropriations for losses, net ⁴	17.2	50.9	137.6
Income taxes.....	102.7	111.3	129.3
Leaving for dividends and shareholders' equity.....	101.5	116.8	124.2
Dividends.....	71.4	75.1	84.0
Total additions to shareholders' equity.....	30.1	44.2	52.7
From above operations.....	30.1	41.7	40.2
From issue of new shares including premiums.....	-	2.5	12.5
AS AT END OF FINANCIAL YEAR			
Shareholders' Equity—			
Undivided profits.....	15.8	11.8	7.2
Retest account.....	963.7	1,009.9	1,062.1
Capital paid up.....	286.0	288.0	293.1
Totals, Shareholders' Equity.....	1,265.4	1,309.6	1,362.3
Accumulated Appropriations for Losses.....	373.2	424.1	561.6

¹ Excluding realized profits and losses on securities held in investment account which are included in the item "Loss experience not included in other operating expenses". ² Includes provision for losses based on five-year average loss experience which in 1968 amounted to \$30,500,000 or 16 p.c. of related loans, and also includes taxes other than income taxes. ³ Before provision for income taxes and appropriations for losses other than those included in "Other operating expenses". ⁴ General and tax-paid appropriations for losses: net after any transfers out of accumulated appropriations for losses to undivided profits or retest account.

Cheque Payments.—Historical data on a monthly basis are available from 1924 on the amount of cheques charged to customer accounts at all chartered bank offices in 35 major clearing house centres. The value of payments rose steadily throughout the country from 1924 until 1929. From 1929 to 1932 the value declined sharply and then fluctuated within rather narrow limits until the outbreak of the Second World War, after which it increased steadily and rapidly. The value of cheques cashed in 35 clearing centres during 1967 reached a high of \$568,122,322,000, an increase of 8.9 p.c. over 1966. All five economic areas contributed to the increase, payments in the Prairie Provinces rising 10.3 p.c., Ontario 9.6 p.c., the Atlantic Provinces 9.5 p.c., British Columbia 8.5 p.c. and Quebec 7.3 p.c. Payments in the two leading centres also reached all-time highs, Toronto advancing 9.0 p.c. and Montreal 6.7 p.c. over the previous year.

16.—Cheques Cashied at 35 Clearing-House Centres, 1966 and 1967

Clearing-House Centre	1966	1967	Clearing-House Centre	1966	1967
	\$'000	\$'000		\$'000	\$'000
Atlantic Provinces.....	11,606,699	12,712,732	Ontario—concluded		
Halifax.....	5,768,603	6,182,636	Sudbury.....	1,095,945	1,274,936
Moncton.....	1,075,397	1,269,034	Toronto.....	188,901,897	205,975,596
Saint John.....	2,077,876	2,183,938	Windsor.....	5,038,315	5,722,255
St. John's.....	2,684,823	3,077,124			
Quebec.....	161,890,942	173,743,117	Prairie Provinces.....	75,583,066	83,373,585
Montreal.....	149,105,805	159,094,150	Brandon.....	401,616	497,111
Quebec.....	11,549,732	13,248,373	Calgary.....	16,474,804	18,430,118
Sherbrooke.....	1,235,405	1,400,594	Edmonton.....	13,046,914	15,492,153
Ontario.....	234,460,197	257,011,586	Lethbridge.....	808,376	922,236
Brantford.....	1,229,858	1,538,214	Medicine Hat.....	371,788	398,806
Chatham.....	997,126	1,153,382	Moose Jaw.....	567,925	425,698
Cornwall.....	864,691	854,930	Prince Albert.....	322,877	393,465
Fort William.....	767,934	809,191	Regina.....	7,886,732	9,036,179
Hamilton.....	10,734,804	10,882,411	Saskatoon.....	2,389,089	2,903,177
Kingston.....	1,019,805	1,104,544	Winnipeg.....	33,312,945	34,874,642
Kitchener.....	2,764,606	2,871,119	British Columbia.....	38,057,010	41,281,302
London.....	7,234,046	7,866,449	New Westminster.....	33,171,639	35,223,762
Ottawa.....	9,624,047	12,363,375	Vancouver.....		
Peterborough.....	1,071,951	1,217,405	Victoria.....	4,885,371	6,057,540
St. Catharines.....	2,020,306	2,123,929			
Sarnia.....	1,094,866	1,253,850	Totals.....	521,597,914	568,122,322

Subsection 4.—Other Banking Institutions

In addition to the savings departments of the chartered banks and of trust and loan companies, there are provincial government savings banking institutions in Ontario and Alberta, as well as two important savings banks in the Province of Quebec—the Montreal City and District Savings Bank and La Banque d'Économie de Québec—established under federal legislation and reporting monthly to the Department of Finance. Co-operative credit unions also encourage savings among low-income classes and extend small loans to their members.

Province of Ontario Savings Office.—The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 5 p.c. per annum (as of April 1968), compounded half-yearly, is paid on accounts and deposits are repayable on demand. Total deposits as of Mar. 31, 1968 were \$96,600,000 and the number of depositors was approximately 92,000; 21 branches are in operation throughout the province.

Province of Alberta Treasury Branches.—Savings deposits are accepted at 65 Treasury Branches throughout the province. The total of such deposits at Mar. 31, 1968 was \$113,841,404, of which \$62,281,286 was payable on demand bearing interest at 4½ p.c. per annum, \$33,647,650 was in term savings for terms of one to six years bearing interest at 5½ p.c. to 6½ p.c. per annum depending on the term, and \$17,912,468 was in term deposit receipts for terms of from 30 days to 365 days bearing interest at rates comparable to those paid on the open market.

Province of Quebec Savings Banks.—The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871, had, at Oct. 31, 1968, a paid-up capital and reserve of \$18,500,000, savings deposits of \$449,089,389, and total liabilities of \$483,452,234. Assets of a like amount included \$144,013,064 of federal, provincial, municipal and other securities.

La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7

had, at Oct. 31, 1968, savings deposits of \$60,885,354 and a paid-up capital and reserve of \$3,500,000. Total liabilities amounted to \$67,682,157 and total assets to a like amount.

Credit Unions.—The first credit union in Canada was founded in Lévis, Que., in 1900, its purposes being to promote thrift by encouraging saving and to provide loans to members who could not get credit elsewhere or could get it only at high interest rates. For many years growth was slow; in 1911, when the first figures were available, assets amounted to \$2,000,000 and by 1940 they were only \$20,000,000. However, since that time there has been a spectacular increase. Assets of the Quebec credit unions amounted to over \$1,000,000,000 at the end of 1964 and to over \$1,800,000,000 at the end of 1967. In other provinces, credit unions have not attained the same importance as they have in Quebec; the first credit union legislation was passed in Nova Scotia in 1932 followed by legislation in Manitoba and Saskatchewan in 1937 and in Ontario and British Columbia in 1938.

Credit unions are under provincial legislation, with almost all local offices in each province belonging to provincial central credit unions, either directly or through regional unions. There is a considerable difference between Quebec and the other provinces in the asset holding of credit unions; Quebec unions have a large proportion of their investments in the form of mortgages and government bonds while unions in the other provinces have a greater percentage in loans. Credit unions probably play their most important role in smaller communities where they may function to a large extent as local banks. The number of chartered credit unions in Canada at the end of 1967 was 4,911 of which 4,404 reported a total membership of 4,281,000 and assets of \$3,367,732,000. Quebec, with 2,418,339 members and assets of \$1,822,632,000, accounted for 54 p.c. of both total membership and total assets of all credit unions in Canada. Credit unions classified by bond of association on a percentage basis were: occupational 28, residential 58 and associational 14.

Canadian credit unions in the 1958-67 decade have continued the steady growth generally in evidence since credit unions were first organized in Quebec in the early part of the present century. Loans granted by credit unions increased by 8 p.c. in 1967 to reach \$1,323,076,000, being a 238-p.c. increase over the corresponding figure of \$391,000,000 in 1958. Assets at \$3,367,732,000 increased by 234 p.c. and savings at \$3,048,000,000 increased by 226 p.c. in the same comparison. Membership of 4,280,000 represented 21 p.c. of the total population, compared with 2,187,000 and 12.7 p.c., respectively, in 1958.

There were 28 central credit unions in 1967; these unions act as credit unions for the credit unions, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when they cannot meet the demand for local loans. Most of the centrals also admit co-operatives as members. Total assets of the centrals increased by 13 p.c. to \$460,000,000 and loans to members increased 21 p.c. to \$329,000,000 over the previous year. The Canadian Co-operative Credit Society serves as a central credit union for the provincial centrals and large co-operatives all across Canada.

17.—Credit Unions in Canada, 1958-67

Year	Credit Unions Chartered	Credit Unions Reporting	Members ¹	Assets ¹	Loans Granted to Members
	No.	No.	No.	\$'000	\$'000
1958.....	4,485	4,156	2,187,494	1,009,363	391,084
1959.....	4,570	4,202	2,360,047	1,157,995	472,688
1960.....	4,608	4,345	2,553,951	1,314,290	481,192
1961.....	4,682	4,348	2,740,251	1,506,167	578,663
1962.....	4,760	4,323	2,879,179	1,673,835	676,312
1963.....	4,809	4,336	3,123,735	1,920,341	771,700
1964.....	4,870	4,362	3,418,033	2,212,660	918,600
1965.....	4,939	4,364	3,677,291	2,541,791	1,078,139
1966 ²	4,934	4,415	3,859,677	2,926,134	1,226,541
1967 ²	4,911	4,404	4,280,908	3,367,732	1,323,076

¹ Reporting organizations only.

² Includes Northwest Territories.

18.—Summary Statistics of Credit Unions, by Province, 1967

Province or Territory	Credit Unions Chartered	Credit Unions Reporting	Members	Assets	Shares	Deposits	Loans Granted to Members
	No.	No.	No.	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	64	22	4,481	1,005	761	96	846
Prince Edward Island..	38	37	9,754	3,578	2,566	486	2,263
Nova Scotia.....	167	159	93,133	36,731	27,147	3,927	28,552
New Brunswick.....	161	161	102,042	34,436	29,632	698	14,759
Quebec.....	1,718	1,658	2,418,339	1,822,632	266,802	1,441,652	499,032
Ontario.....	1,659	1,277	797,750	648,942	417,721	158,471	309,784
Manitoba.....	250	250	168,195	142,739	97,684	24,688	84,270
Saskatchewan.....	289	286	283,491	353,792	222,004	83,792	166,249
Alberta.....	283	280	127,675	87,266	60,245	14,488	53,540
British Columbia.....	280	272	275,852	236,576	144,115	51,478	163,750
Northwest Territories..	2	2	196	35	32	—	31
Totals.....	4,911	4,404	4,280,908	3,367,732	1,268,709	1,779,776	1,323,076

19.—Assets, Liabilities and Members' Equity of Local Credit Unions in Canada, 1967

(Millions of dollars)

Item	1966 ¹	1967	Item	1966 ¹	1967
Assets			Liabilities		
Cash and Demand Deposits—			Accounts Payable—		
On hand.....	319	49	Interest.....	13	2
In banks.....		30	Dividends.....		—
In centrals.....		269	Other.....		5
Other.....		11			
Investments—			Loans Payable—		
Term deposits.....	557	99	Centrals.....	88	93
Government of Canada.....		48	Banks.....	2	10
Provincial governments.....		78	Other.....	2	4
Municipal governments.....		281			
Shares in centrals.....		48	Deposits—		
Religious institutions.....		28	Ordinary.....	1,456	1,592
Hospitals.....		16	Term.....	53	194
Other.....		60	Other Liabilities.....	6	2
Loans—			Members' Equity		
Cash loans—			Share capital.....	1,114	1,252
Personal.....	1,083	1,092	Reserves.....	127	142
Farm.....		82	Undivided earnings.....	64	86
Co-operatives and other enterprises		28			
Other.....		58			
Mortgage loans—			Totals, Liabilities and Members' Equity.....	2,926	3,382
Dwellings.....	859	862			
Farm.....		68			
Co-operatives and other enterprises		26			
Other.....		19			
Fixed Assets— ²					
Land and buildings.....	77	85			
Equipment and furniture.....	16	22			
Other Assets ³	15	22			
Totals, Assets.....	2,926	3,382			

¹ Some data not available prior to 1967.³ Other assets include stabilization fund deposits.² Fixed assets are shown net of accumulated depreciation.

Section 2.—Other Commercial Finance

Subsection 1.—Trust and Mortgage Loan Companies

Trust and mortgage loan companies are registered with either the federal or provincial governments. They operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 as amended in 1953, 1958, 1961 and 1964-65, and RSC 1952, c. 272 as amended in 1953, 1958, 1961 and 1964-65, respectively) or under corresponding provincial legislation.

The first mortgage loan companies were established in Ontario in the 1840s as co-operative associations to provide mortgage finance for their members. These associations evolved under legislation which was amended to give them permanent corporate status as mortgage-lending institutions. They obtained their funds principally by selling medium- and long-term debentures to the public but also had the power to open deposit accounts. Trust companies were first incorporated in Ontario in the 1880s. Although the trust company legislation prevented them from borrowing funds, they had the power to accept funds in guaranteed trust accounts and invest them in specified types of assets. This feature of trust company legislation is now general throughout Canada. The trust companies operate as financial intermediaries in the same way as mortgage loan companies, chartered banks or savings and other financial institutions and are the only corporations in Canada with power to act as trustees for property interests and to conduct other fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Trust and mortgage loan companies were established and grew rapidly under provincial legislation in the late nineteenth and early twentieth centuries. Some companies were chartered by special Acts of Parliament but it was not until 1914 that federal legislation was passed and the Federal Government began to regulate trust and loan companies registered under its Acts. In 1967 there were nine federal trust companies and 12 federal loan companies. The Superintendent of Insurance examines these companies and also, by arrangement with the provinces, trust and loan companies incorporated in Nova Scotia and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there are many differences among the various federal and provincial Acts, the broad lines of the legislation are common. In their intermediary business the companies have the powers mentioned above to borrow or, in the case of trust companies, accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholders' equity. The funds may be invested in specified assets which include first mortgages on real property, government securities and the bonds and equity of corporations having established earnings records and the companies may grant loans on the security of such bonds and stocks. Trust and loan companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined "liquid asset" requirements in a number of the Acts.

The trust and mortgage loan companies have been substantial members of the Canadian financial system since their early years. In the 1920s they held about one half of the private mortgage business in Canada but their growth rate fell off sharply because of the impact of the depression of the 1930s and World War II on the mortgage business. In the years since the War the re-emergence of strong demands for mortgage financing and the willingness of many trust and loan companies to compete aggressively for funds have led to sustained rapid expansion.

According to DBS figures, mortgage loan companies had assets before investment in subsidiaries of \$2,762,364,000 at the end of 1968 compared with \$2,564,752,000 a year earlier. Their holdings of mortgages amounted to \$2,235,116,000 or 81 p.c. of total assets. To finance their investments, these companies had borrowed \$1,780,089,000 or 64 p.c. of their total funds by the sale of debentures and \$449,544,000 from deposit accounts.

At the end of 1968, company and guaranteed funds of trust companies in the DBS survey were \$4,971,582,000 compared with \$4,352,864,000 a year earlier, an increase of 14 p.c. Trust companies, while not specializing in mortgage financing to the same extent as loan companies, in recent years have been putting a high proportion of their funds into these investments with the result that mortgages were 55 p.c. of their assets at the end of 1968 compared with 48 p.c. five years earlier. The trust companies had \$3,207,119,000 of term certificates outstanding and \$1,223,976,000 deposit accounts in December 1968, accounting for 89 p.c. of total funds. About one half of the demand or savings deposits were in chequeable accounts. There is considerable variety among the trust companies and a few have developed a substantial short-term business, raising funds by issuing certificates for terms as short as thirty days and also operating as lenders in the money market. Nevertheless, it remains true that the main business of the trust companies in their intermediary role, as of the mortgage loan companies, is to channel savings into mortgages and other long-term investments. In addition, trust companies, as of Dec. 31, 1967, had \$14,386,000,000 under administration in estate, trust and agency accounts.

More complete and up-to-date financial information may be found in quarterly balance sheet statements published by the DBS and the Bank of Canada, the reports of the Superintendent of Insurance on Loan and Trust Companies and the reports of provincial supervisory authorities.

20.—Assets, Liabilities and Shareholders' Equity of Trust Companies (Company and Guaranteed Funds), 1963-68

(Millions of dollars)

Item	1963	1964	1965	1966	1967	1968
Assets						
Demand deposits, incl. cash and foreign currency	71	86	98	88	93	119
Investments—						
Investments in Canadian Securities—						
Federal.....	318	385	387	438	455	517
Provincial.....	154	168	195	229	285	285
Municipal.....	114	138	126	127	111	120
Sales finance and commercial paper.....	135	183	208	195	149	229
Term deposits with chartered banks.....	..	..	..	72	170	190
Term deposits with trust and mortgage companies.....	..	..	..	18	14	28
Corporation bonds and debentures.....	170	198	219	240	291	320
Collateral loans.....	123	102	108	120	115	142
Mortgages—						
Loans under NHA.....	1,103	1,449	1,975	493	506	546
Conventional mortgage loans.....				1,677	1,008	2,176
Investments in Canadian preferred and common shares.....	65	67	75	83	85	97
Investments in foreign securities.....	4	6	5	14	23	22
Investments in subsidiary and affiliated companies.....	10	18	19	30	32	56
Interest, rents and other receivables.....	..	..	..	24	38	42
Real estate and equipment.....	36	43	46	46	52	53
Other assets.....	18	19	27	29	26	30
Totals, Assets¹.....	2,321	2,860	3,488	3,923	4,352	4,972

¹For footnote, see end of table.

20.—Assets, Liabilities and Shareholders' Equity of Trust Companies (Company and Guaranteed Funds), 1963-68—concluded

Item	1963	1964	1965	1966	1967	1968
Liabilities						
Demand and Savings Deposits—						
Chequing.....	450	505	551	557	572	575
Non-chequing.....	360	543	564	539	591	650
Term Deposits—						
Under one year.....				612	623	798
One to six years.....	1,299	1,551	2,006	1,785	2,085	2,380
Over six years.....				30	32	30
Bank loans.....	2	2	4	6	7	5
Short-term loans and notes payable.....	6	5	37	15	19	20
Debts owing parent and affiliated companies.....				8	10	38
Interest, dividends, taxes and other payables ¹	4	4	11	36	62	87
Shareholders' Equity						
Capital paid up.....	71	93	101	114	119	115
Investment reserves.....				68	76	85
Reserve fund.....	115	135		141	148	177
Net accruals, payables and retained earnings ¹	15	21	214	—	—	—
Retained earnings.....				12	9	12
Totals, Liabilities and Shareholders' Equity¹.....	2,321	2,860	3,488	3,923	4,353	4,972

¹ Prior to 1966, total assets exclude dividends, accrued interest and other receivables; these receivables are netted against the combined liability items, interest, dividends and other payables, and retained earnings.

21.—Revenues and Expenses of Trust Companies, 1966-68

(Millions of dollars)

Item	1966	1967	1968
Revenues			
Interest earned.....	221	257	302
Dividends.....	4	4	5
Fees and commissions.....	71	81	92
Other revenue.....	11	10	8
Totals, Revenues.....	307	352	407
Expenses			
Interest.....	160	190	234
Depreciation.....	3	3	3
Amortization.....	—	1	1
Income taxes.....	16	15	16
Other expenses.....	109	119	128
Totals, Expenses.....	288	328	382
Net profit.....	19	24	25

22.—Assets, Liabilities and Shareholders' Equity of Mortgage Loan Companies, 1963-68

(Millions of dollars)

Item	1963	1964	1965	1966	1967	1968
Assets						
Demand deposits, incl. cash and foreign currency	20	63	54	32	38	61
Investments—						
Investments in Canadian Securities—						
Federal.....	107	120	117	125	133	122
Provincial.....	35	42	39	44	49	47
Municipal.....	8	11	10	10	10	8
Sales finance and commercial paper.....	4	8	2	1	11	12
Term deposits with chartered banks.....	..	..	..	5	17	30
Term deposits with trust and mortgage companies.....	..	..	..	5	5	5
Corporation bonds and debentures.....	25	26	31	24	28	31
Collateral loans.....	13	13	20	22	21	25
Mortgages—						
Loans under NHA.....	1,188	1,492	1,839	128	130	152
Conventional mortgage loans.....				1,820	1,943	2,083
Investments in Canadian preferred and common shares.....	52	56	55	58	68	71
Investments in foreign securities.....	4	4	4	4	5	5
Investments in subsidiary and affiliated companies.....	43	50	201 ¹	195	208	214
Interest, rents and other receivables ².....	..	..	..	22	24	26
Real estate and equipment.....	36	42	51	59	61	60
Other assets.....	8	10	15	16	21	24
Totals, Assets².....	1,544	1,936	2,438	2,570	2,772	2,976
Liabilities						
Demand and Savings Deposits—						
Chequing.....	139	155	162	165	152	157
Non-chequing.....	121	166	203	219	246	293
Term Deposits—						
Under one year.....	995	1,182	1,372	27	43	44
One to six years.....				834	959	1,092
Over six years.....				625	649	647
Bank loans.....	22	25	63	69	64	42
Short-term loans and notes payable.....	36	108	125	95	79	80
Debts owing parent and affiliated companies.....	16	46	224 ¹	176	179	180
Interest, dividends, taxes, and other payables ² ..				59	65	87
Shareholders' Equity						
Capital paid up.....	80	107	123	123	133	136
Investment reserves.....	87	93	166	30	37	42
Reserve fund.....				95	112	122
Net accruals, payables, and retained earnings ² ..	47	54		—	—	—
Retained earnings.....	..	..	..	53	54	54
Totals, Liabilities and Shareholders' Equity².....	1,544	1,936	2,438	2,570	2,772	2,976

¹ The increase over the previous year is caused by changes in inter-company accounts of affiliated companies.² Prior to 1966, total assets exclude dividends, accrued interest and other receivables; these receivables are netted against the combined liability items, interest, dividends and other payables and retained earnings.

23.—Revenues and Expenses of Mortgage Loan Companies, 1966-68

(Millions of dollars)

Item	1966	1967	1968
Revenues			
Interest earned.....	163	173	189
Dividends.....	7	7	10
Fees and commissions.....	1	1	1
Other revenue.....	26	25	26
Totals, Revenues.....	197	206	226
Expenses			
Interest.....	109	118	131
Depreciation.....	2	2	2
Amortization.....	1	1	1
Income taxes.....	13	13	16
Other expenses.....	48	44	48
Totals, Expenses.....	173	178	198
Net profit.....	24	28	28

Subsection 2.—Licensed Small Loans Companies and Licensed Money-Lenders*

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1952, c. 251, as amended by SC 1956, c. 46). This Act, first passed in 1939, sets maximum charges on personal cash loans not in excess of \$1,500 and is administered by the Department of Insurance. Lenders not licensed under the Act may not charge more than 1 p.c. per month. Those wishing to make small loans at higher rates must be licensed each year by the Minister of Finance under the Small Loans Act. The Act allows maximum rates, including charges of every kind, of 2 p.c. per month on unpaid balances not exceeding \$300, 1 p.c. per month on the portion of unpaid balances exceeding \$300 but not exceeding \$1,000 and one half of 1 p.c. on any remainder of the balance exceeding \$1,000. Loans in excess of \$1,500 are not regulated and lenders operating entirely above this limit and the larger loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate charges for the instalment financing of sales. Prior to Jan. 1, 1957, the Act applied only to loans of \$500 or less and the maximum rate was 2 p.c. per month.

At the end of 1967, there were five small loans companies and 71 money-lenders licensed under the Act. Small loans companies are incorporated by special Acts of the Parliament of Canada, the first of them commencing business in 1928; the money-lenders include provincially incorporated companies and a few partnerships and individuals. Many of the small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and United States finance or loan companies, and these subsidiary companies account for a high proportion of the total business of licensed lenders. The affiliations with sales finance companies reflect the close relation-

* Prepared by the Research Department of the Bank of Canada in co-operation with the Superintendent of Insurance for Canada.

ship between instalment financing and the consumer loan business. The Dominion Bureau of Statistics publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish the two groups within the industry.*

The subsidiary small loans companies and money-lenders obtain most of their funds through their parent companies. A few of the larger companies have supplemented their bank loans by selling short-term paper in the market but the amount has been small compared with the short-term market borrowing of the sales finance companies. The smaller independent companies rely mainly on their shareholders and on borrowing from the chartered banks.

The annual figures of assets and liabilities given in Table 24 for 1964-67 are from the Department of Insurance report.*

24.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1964-67

Assets and Liabilities	1964	1965	1966	1967
	\$	\$	\$	\$
Assets	797,271,316	899,510,592	995,273,267	1,042,901,678
Small loans balances	575,126,976	627,526,360	647,887,126	635,822,357
Balances, large loans and other contracts	203,473,461	238,469,695	311,984,099	372,603,457
Cash	6,546,620	10,602,031	10,432,107	11,604,824
Other	12,124,259	22,912,506	24,969,935	22,870,940
Liabilities	797,271,316	899,510,592	995,273,267	1,042,901,678
Borrowed money	647,138,005	728,802,326	799,454,035	823,137,246
Reserves for losses	17,895,299	19,843,853	24,380,272	25,893,727
Paid-up capital	49,044,243	51,749,884	50,687,274	50,795,964
Surplus paid in by shareholders	443,370	5,443,994	7,702,743	8,702,743
Earned surplus	37,671,201	38,817,315	46,246,460	54,631,858
Other	45,079,198	54,853,220	66,802,483	79,740,140

There was little change in 1967 compared with 1966 in the amount of small loans business done by the combined companies. Small loans made to the public during the year numbered 1,470,272 as against 1,493,212 in 1966, a drop of about 1.5 p.c.; the amount of such loans increased from \$873,508,887 to \$877,197,604, about 0.4 p.c. The average small loan made was about \$597 in 1967 and \$585 in 1966. At the end of the year, small loans outstanding numbered 1,253,764 for an amount of \$635,822,356, or an average of \$507 per loan; comparable figures for 1966 were 1,287,748, \$647,887,121 and \$503, respectively.

Gross profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts increased from \$32,695,170 in 1966 (\$17,588,584 being the profit on small loans and \$15,106,586 the profit on business other than small loans) to \$34,767,811 in 1967 (\$15,493,481 being the profit on small loans and \$19,274,330 the profit on other business).

Subsection 3.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870, was defined as 15/73 of the British gold sovereign.† That is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Cana-

* See *Business Financial Statistics* (Catalogue No. 61-006). More complete data on the business of licensed lenders are given in the *Report of the Superintendent of Insurance for Canada on Small Loans Companies and Money-Lenders* for the year ended Dec. 31, 1967 (Catalogue No. In 3-4/1967).

† The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

dian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under \$2 per thousand.

On the outbreak of World War I, Canada and Britain suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at \$4.76 in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of Britain, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

From 1915 to the end of 1917, fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919, the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as \$3.18.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After Britain resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930, when it went to a small premium in New York, the dollar remained below parity until Britain abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933 both currencies had reached a premium in New York. Meanwhile, in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved toward resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at \$35 per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, Britain and other sterling countries introduced foreign exchange control involving fixed buying and selling rates of \$4.02½ and \$4.03½, respectively, in terms of the United States dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control† in Canada and established fixed buying and selling rates of \$1.10 to \$1.11 for the

* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in the 1941 to 1952-53 editions of the Year Book.

U.S. dollar and \$4.43 to \$4.47 for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to \$1.10½ and \$4.45, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of \$1.00 to \$1.00½ and for sterling \$4.02 to \$4.04. These rates continued in effect until Sept. 19, 1949 when, following a 30.5-p.c. reduction by Britain in the value of sterling to \$2.80 U.S. (an action which was paralleled in varying degrees by numerous other currencies), Canada returned to the former official rates of \$1.10 and \$1.10½ for United States funds. Sterling was quoted at \$3.07¼ and \$3.08¼ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until Dec. 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of 92½ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund and, in accordance with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1 p.c. on either side of the established par value. The movements of the U.S. dollar in Canadian funds from January 1959 to December 1968 are shown in Table 25.

25.—Price of the United States Dollar in Canada, by Month, 1959-68

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.
(Canadian cents per U.S. dollar)

Month	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
January.....	96.69	95.31	99.29	104.50	107.71	108.02	107.38	107.46	107.95	108.47
February.....	97.49	95.17	98.96	104.88	107.76	108.00	107.58	107.63	108.06	108.73
March.....	96.98	95.09	98.73	104.94	107.80	108.05	108.11	107.62	108.20	108.49
April.....	96.35	96.29	98.89	104.98	107.68	108.09	107.92	107.70	108.24	108.01
May.....	96.29	97.81	98.75	108.23	107.72	108.09	107.95	107.67	108.21	107.79
June.....	95.88	98.23	100.55	108.79	107.82	108.09	108.23	107.65	108.04	107.68
July.....	95.74	97.84	103.41	107.89	107.97	108.13	108.35	107.48	107.78	107.36
August.....	95.44	96.98	103.15	107.76	108.29	107.87	107.84	107.51	107.58	107.26
September.....	95.16	97.25	103.08	107.68	107.98	107.61	107.64	107.62	107.53	107.30
October.....	94.77	97.85	103.03	107.60	107.79	107.53	107.51	107.93	107.33	107.27
November.....	95.03	97.67	103.57	107.68	107.76	107.39	107.49	108.20	107.51	107.30
December.....	95.12	98.24	104.27	107.60	107.93	107.46	107.58	108.31	108.02	107.31
Annual Average....	95.90	96.97	101.32	106.89	107.85	107.86	107.80	107.73	107.87	107.75

26.—Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1959-68

NOTE.—Holdings comprise gold, U.S. dollars and short-term securities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.

(Millions of U.S. dollars)

Year	Gold	U.S. Dollars	Total	Year	Gold	U.S. Dollars	Total
1959.....	959.6 ¹	909.6	1,869.2 ¹	1964.....	1,025.7	1,648.6	2,674.3 ³
1960.....	885.3	943.9	1,829.2	1965.....	1,150.8	1,513.7	2,664.5 ³
1961.....	946.2	1,109.6	2,055.8	1966.....	1,045.6	1,190.3	2,235.9 ³
1962.....	708.5	1,830.9	2,539.4 ²	1967.....	1,014.9	1,252.9	2,267.8 ³
1963.....	817.2	1,777.8	2,595.0 ²	1968.....	863.1	1,963.7	2,826.8 ³

¹ On Oct. 1, 1959, \$62,500,000 representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund.

² Includes the proceeds of a drawing equivalent to U.S. \$300,000,000 which was made from the International Monetary Fund in June 1962 and which was outstanding at year-end. The amount of Canada's net obligation to the International Monetary Fund was \$275,700,000 at Dec. 31, 1962 and \$196,000,000 at Dec. 31, 1963.

³ Canada's net creditor position with the International Monetary Fund was \$60,000,000 at Dec. 31, 1964, \$215,900,000 at Dec. 31, 1965, \$263,500,000 at Dec. 31, 1966, \$248,300,000 at Dec. 31, 1967 and \$21,200,000 at Dec. 31, 1968.

Subsection 4.—The Bond Market

Sales of Canadian Bonds.—Canadian borrowers, government and corporate, raised a net total of \$4,337,000,000 on the bond market in 1967. This is the largest amount in the five-year period shown in Table 27. Both national savings and business gross fixed capital formation showed little change from the level attained in 1966. A decrease in the value of physical change in inventories was balanced by the improvement in the current account with non-residents. Government deficits, and investment outlays of business greatly in excess of savings from retained earnings and depreciation, necessitated recourse to the bond market.

Increased expenditures of governments, including capital outlays, almost doubled the size of the combined deficit on a national accounts basis from that incurred by the sector in the previous year, exclusive of the transactions of the Canada Pension Plan and the Quebec Pension Plan. Excess funds from these pension plans were made available to the provinces through the Canada Pension Plan Investment Fund and the Quebec Deposit and Investment Fund. CPP series bonds purchased by the former fund in 1967 amounted to \$669,000,000, while the Quebec agency increased its investment portfolio by about \$164,000,000, mostly in bonds of the Province of Quebec, out of deposits of the Quebec Pension Plan. Rising capital investment projects of government business enterprises and higher provincial lending for industrial development, residential construction and farm credit necessitated additional borrowings, as did the assumption by some provinces of the financing of municipal activities.

The Government of Canada increased its bonds outstanding in 1967 by 4 p.c. or approximately \$300,000,000 each of treasury bills, marketable bonds and non-marketable bonds. Business borrowings were made mostly for capital investment, although holdings of liquid assets were also increased.

The trend toward higher interest rates continued from the spring of 1967. The long-term average yield on Government of Canada direct and guaranteed securities rose from 5.40 p.c. to 5.76 p.c. over the year. Short-term money market rates also rose but, since most of the rise took place in the last quarter, for most of 1967 there was a larger differential between short-term and long-term rates than had existed in 1966.

There was a net retirement of \$9,000,000 in finance and loan company short-term paper, while other short-term commercial paper increased by \$50,000,000. These changes compare with increases in 1966 of \$93,000,000 and \$31,000,000, respectively. Bank loans to business increased in 1967 as did net issues of corporate preferred and common stocks.

Bonds Outstanding.—Total government and business bonds outstanding at the end of 1967 amounted to \$56,449,000,000, an increase of 8 p.c. over 1966 and of 29 p.c. since 1963. In the 1963-67 period, the largest increase was one of 52 p.c. in the bonded debt of provincial governments. This increase includes issues held in the Canada Pension Plan Investment Fund and the Quebec Deposit and Investment Fund since the inception of the plans in 1966. Corporate bonds outstanding increased by 47 p.c. and municipal government bonds by 37 p.c. between 1963 and 1967. Except for institutional bonds, the rate of increase accelerated in the latter year.

27.—Canadian Bonds Outstanding as at Dec. 31, 1963-67, and Annual Changes in Bonds and in Short-Term Paper Outstanding

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; institutional bonds exclude bonds payable in Canadian dollars of the International Bank for Reconstruction and Development and certain foreign governments, amounting to \$63,000,000, \$65,000,000, \$84,000,000, \$102,000,000 and \$120,000,000 in the years 1963-67, respectively. Source: *Bank of Canada Statistical Summary 1967 Supplement*, pp. 87 and 97.

Item	1963	1964	1965	1966	1967
Bonds Outstanding Dec. 31					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government of Canada.....	20,276	20,733	20,681	21,111	22,011
Provincial government.....	10,200	11,150	11,883	13,410	15,484
Municipal government.....	4,761	5,214	5,477	6,083	6,539
Corporate.....	8,234	9,054	10,356	11,298	12,079
Institutional.....	269	278	295	310	336
Totals.....	43,740	46,429	48,692	52,112	56,449
Changes in Bonds Outstanding and in Short-Term Paper ¹					
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Bonds—					
Government of Canada.....	827	457	-52	430	900
Treasury bills.....	75	-100	10	20	285
Marketable bonds.....	273	55	-595	67	310
Non-marketable bonds.....	479	602	333	363	303
Provincial government.....	1,152	950	733	1,527	2,074
Municipal government.....	398	453	263	506	556
Corporate.....	428	820	1,302	942	781
Institutional.....	33	9	17	15	26
Totals, Bonds.....	2,838	2,689	2,263	3,420	4,387
Short-Term Paper—					
Corporate—					
Finance and loan company paper.....	166	259	-162	93	-9
Other short-term paper.....	-43	46	-120	31	50
Totals, Short-Term Paper.....	123	305	-282	124	41
Totals, Bonds and Short-Term Paper.....	2,961	2,994	1,981	3,544	4,378

¹ Changes in bonds outstanding do not agree with Bank of Canada figures on net new issues due to takeovers, bankruptcies, etc.

Distribution of Bond Holdings.—Table 28 shows the estimated distribution as at Dec. 31, 1967 of government and corporate bonds among the major purchasers of securities. Governments and the financial institutions specified in the table held one half of the total; of the remainder, non-residents held 19 p.c. and all other residents held 30 p.c. Of the 30 p.c., however, 11 p.c. was made up of holdings by persons of Canada Savings Bonds. The largest identified holders of bonds were chartered banks with 10 p.c. of the total, life insurance companies with 9 p.c. and trustee pension plans with 8 p.c.

28.—Estimated Distribution of Bond Holdings, as at Dec. 31, 1967

NOTE.—Federal, provincial and municipal bonds include direct and guaranteed issues; "other" bonds include bonds of religious and other institutions; and a small amount of foreign bonds payable in Canadian dollars; short-term commercial borrowing is excluded. Source: *Bank of Canada Statistical Summary*, pp. 840, 926 and 927.

Holder	Government of Canada Bonds	Provincial Government Bonds	Municipal Government Bonds	Corporate and Other Bonds	Total	P.C. of Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	
Bank of Canada.....	3,807	—	—	270	4,077	7.2
Chartered banks.....	4,630	343	348	605	5,926	10.5
Government of Canada.....	814	1,131 ¹	—	—	1,945	3.4
Provincial governments.....	475	1,951	271	236	2,933	5.2
Municipal governments.....	61	143	675	50	929	1.6
Life insurance companies.....	410	1,142	720	2,741	5,013	8.9
Other insurance companies.....	633	497	176	329	1,635	2.9
Quebec savings banks.....	35	58	29	32	154	0.3
Trust and loan companies.....	588	335	123	817	1,363	2.4
Trusted pension plans.....	284	2,368	697	1,207	4,556	8.1
All other resident.....	9,605 ²	3,509	2,000	2,097	17,211	30.5
Non-resident.....	669	4,007	1,500	4,531	10,707	19.0
All Holders.....	22,011	15,484	6,539	12,415	56,449	100.0

¹ Held by the Canada Pension Plan Investment Fund.

² Includes Canada Savings Bonds of \$6,319,000,000. Corporations and other businesses, churches, charities and other associations were made eligible to purchase Canada Savings Bonds for the first time with the 1967-68 series.

PART II.—INSURANCE*

Section 1.—Life Insurance

Life insurance in force in Canada with companies registered by the Federal Government (exclusive of fraternal benefit societies) amounted to \$84,805,000,000 at the end of 1967, an increase of \$7,981,000,000 during the year. The ratio of gain in business in force, expressed as a percentage of the amount in force at the beginning of the same year, was 10.4 p.c. in 1967.

Year	In Force at Beginning of Year	Increase in Force for the Year	Percentage Gain
	\$'000,000	\$'000,000	
1930.....	6,157	335	5.4
1935.....	6,221	38	0.6
1940.....	6,776	200	2.9
1945.....	9,140	612	6.7
1950.....	14,409	1,337	9.3
1955.....	23,135	2,317	10.0
1960.....	40,874	3,775	9.2
1961.....	44,649	3,635	8.1
1962.....	48,284	3,949	8.2
1963.....	52,233	4,571	8.8
1964.....	56,804	5,868	10.3
1965.....	62,672	6,984	11.1
1966.....	69,656	7,168	10.3
1967.....	76,824	7,981	10.4

* Material in this Part, except as otherwise indicated, was prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the annual reports of the Department of Insurance.

Subsection 1.—Summary of Life Insurance in Canada

Table 1 summarizes insurance premiums, claims, amounts of new policies effected and amounts of insurance in force on Dec. 31, 1967. These data are presented according to supervising government authorities for the companies and societies concerned, and according to nationality of company or society.

1.—Summary of Life Insurance in Canada according to Supervising Government Authority and by Nationality of Company or Society, 1967

Supervising Authority and Nationality of Company or Society	Insurance Premiums	Claims ¹	New Policies Effected	Insurance in Force, Dec. 31
	\$'000	\$'000	\$'000	\$'000
Supervising Authority				
Federally Registered	1,113,565	435,691	10,635,087	85,989,791
Companies.....	1,093,823	428,629	10,391,372	84,804,957
Societies.....	19,742	7,062	243,715	1,184,834
Provincially Licensed Only	87,791	35,962	1,212,463	6,282,681
Within Province of Incorporation—				
Companies.....	68,144	25,858	864,098	4,871,053
Societies.....	4,918	3,239	220,411	590,092
Outside Province of Incorporation—				
Companies.....	11,056	4,288	94,569	647,331
Societies.....	3,673	2,577	33,390	174,205
Totals	1,201,356	471,653	11,847,555	92,272,472
Nationality of Company or Society				
Canadian Companies—				
Federally registered.....	726,809	294,471	6,970,574	58,444,750
Provincially licensed only.....	79,201	30,146	958,667	5,518,384
Canadian Societies—				
Federally registered.....	13,328	4,914	208,139	902,548
Provincially licensed only.....	8,590	5,816	253,801	764,297
British Companies—				
Federally registered.....	61,459	12,976	674,983	3,993,899
Foreign Companies—				
Federally registered.....	305,555	121,181	2,745,815	22,366,308
Foreign Societies—				
Federally registered.....	6,414	2,148	35,577	282,286

¹ Death, disability and maturity under insurance contracts.

Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has more than doubled since 1955.

The operations analysed in the tables of this Subsection, with the exception of Table 6, include only those of companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for over 93 p.c. of the life insurance in force in Canada.

2.—Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1960 and Annually 1961-67

NOTE.—Figures for 1880-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; for 1940-54 in the 1957-58 edition, p. 1168; and for 1955-59 in the 1967 edition, p. 1147. Statistics of fraternal society insurance, excluded here, are given at pp. 1175-1177.

Year	New Insurance Effected during Year	Insurance in Force Dec. 31				Insurance in Force per Capita ¹
		Canadian Companies	British Companies	Foreign Companies	Total	
	\$	\$	\$	\$	\$	\$
1880.....	13,906,887	37,838,518	19,789,863	33,643,745	91,272,126	21.45
1890.....	39,802,956	135,218,990	31,613,730	81,591,847	248,424,567	51.98
1900.....	67,729,115	267,151,086	39,485,344	124,433,416	431,069,846	81.32
1910.....	150,785,305	565,667,110	47,816,775	242,629,174	866,113,059	122.51
1920.....	630,110,900	1,661,348,605	76,883,090	915,793,798	2,657,025,493	310.55
1930.....	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	636.00
1940.....	590,205,536	4,609,213,977	145,603,299	2,220,505,184	6,975,322,460	612.89
1950.....	1,798,864,211	10,756,249,942	342,878,530	4,646,707,595	15,745,836,067	1,148.33
1960.....	5,692,887,763	30,418,380,871	1,554,844,168	12,675,749,459	44,648,974,498	2,498.54
1961.....	6,113,480,078	33,143,378,921	1,778,255,673	13,362,848,638	48,284,483,232	2,647.47
1962.....	6,027,069,888	35,907,032,820	2,040,700,311	14,285,636,913	52,233,370,044	2,810.81
1963.....	6,933,120,080	39,135,221,497	2,328,769,718	15,339,860,385	56,803,851,600	3,000.57
1964.....	7,802,504,767	43,209,488,534	2,706,336,254	16,756,485,863	62,672,310,651	3,248.95
1965.....	8,967,408,329	47,900,424,908	3,070,766,357	18,684,766,954	69,655,958,219	3,545.92
1966.....	9,040,333,979	52,622,094,411	3,521,137,968	20,681,132,082	76,824,364,461	3,838.34
1967.....	10,391,371,781	58,444,750,160	3,993,899,260	22,366,308,042	84,804,957,462	4,156.09

¹ Based on official estimates of population.

3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1965-67

Item	1965	1966	1967
Canadian Companies—			
New policies effected during year..... No.	403,403	409,923	417,885
..... \$	5,868,615,959	5,805,493,952	6,970,574,222
Policies in force Dec. 31..... No.	5,471,733	5,536,126	5,602,524
..... \$	47,900,424,908	52,622,094,411	58,444,750,160
Policies ceased by death or maturity..... No.	62,166	62,395	63,172
..... \$	243,837,741	259,295,000	284,243,678
Insurance premiums..... \$	640,358,269	686,322,516	726,809,318
Claims incurred ¹ \$	252,523,784	268,516,114	294,471,357
British Companies—			
New policies effected during year..... No.	37,421	39,742	44,368
..... \$	523,734,283	659,761,522	674,982,834
Policies in force Dec. 31..... No.	323,461	339,026	356,499
..... \$	3,070,766,357	3,521,137,968	3,993,899,260
Policies ceased by death or maturity..... No.	2,429	2,319	2,395
..... \$	10,291,362	10,337,124	13,046,245
Insurance premiums..... \$	49,133,327	54,743,097	61,458,629
Claims incurred ¹ \$	10,468,423	10,614,922	12,976,394
Foreign Companies—			
New policies effected during year..... No.	239,997	239,280	257,307
..... \$	2,575,058,087	2,575,078,505	2,745,814,725
Policies in force Dec. 31..... No.	4,513,610	4,437,105	4,386,789
..... \$	18,684,766,954	20,681,132,082	22,366,308,042
Policies ceased by death or maturity..... No.	69,701	68,822	73,872
..... \$	101,030,110	109,037,796	116,415,282
Insurance premiums..... \$	272,656,430	291,769,583	305,555,478
Claims incurred ¹ \$	105,156,253	112,431,333	121,181,216

¹ Death, disability and maturity under insurance contracts.

3.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1965-67—concluded

Item	1965	1966	1967
All Companies—			
New policies effected during year..... No.	685,821	688,945	719,560
..... \$	8,967,408,329	9,040,333,979	10,391,371,781
Policies in force Dec. 31..... No.	10,308,804	10,312,257	10,345,812
..... \$	69,655,958,219	76,824,364,461	84,804,957,462
Policies ceased by death or maturity..... No.	134,296	133,536	139,439
..... \$	355,159,213	378,669,920	413,705,205
Insurance premiums..... \$	962,148,026	1,032,835,196	1,093,823,425
Claims incurred ¹ \$	368,148,460	391,562,369	428,628,967

¹ Death, disability and maturity under insurance contracts.

4.—Ordinary and Industrial Life Insurance Policies Effected and in Force in Canada by Companies under Federal Registration, 1965-67

Year, Type of Policy and Nationality of Company	New Policies Effected			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
1965		\$	\$		\$	\$
Ordinary Policies—						
Canadian.....	404,929	3,692,745,720	9,119	5,339,451	28,309,185,739	5,302
British.....	37,253	467,740,163	12,556	298,822	2,608,387,526	8,729
Foreign.....	225,399	1,769,815,012	7,852	2,816,398	10,338,608,829	3,671
Industrial Policies—						
Canadian.....	—	—	—	107,529	59,941,506	557
British.....	—	—	—	23,823	2,834,069	119
Foreign.....	10,618	6,151,513	579	1,677,608	694,414,184	414
1966						
Ordinary Policies—						
Canadian.....	406,893	3,950,297,199	9,708	5,410,244	30,188,492,997	5,580
British.....	39,567	523,664,018	13,235	315,351	2,920,731,302	9,262
Foreign.....	228,246	1,918,272,049	8,404	2,848,634	11,195,385,577	3,930
Industrial Policies—						
Canadian.....	—	—	—	100,208	56,923,263	568
British.....	—	—	—	22,771	2,677,936	118
Foreign.....	7,942	4,596,398	579	1,569,026	662,382,309	422
1967						
Ordinary Policies—						
Canadian.....	414,655	4,295,982,701	10,360	5,482,060	32,228,397,857	5,879
British.....	44,215	621,402,311	14,054	333,884	3,300,589,238	9,885
Foreign.....	236,807	2,087,205,627	8,814	2,890,330	12,137,062,430	4,199
Industrial Policies—						
Canadian.....	—	—	—	93,976	54,047,828	575
British.....	—	—	—	21,653	2,527,557	117
Foreign.....	17,913	10,312,440	576	1,477,254	638,691,908	432

5.—Group Life Insurance Effected and in Force in Canada by Companies under Federal Registration, 1965-67

Year and Nationality of Company	Effected		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
	No.	\$	No.	No.	\$	\$
1965						
Canadian.....	3,474	2,175,870,239	24,753	14,215,563	19,531,297,663	1,374
British.....	168	55,994,120	816	339,855	459,544,762	1,352
Foreign.....	3,980	799,091,562	19,604	5,392,121	7,651,743,941	1,419
1966						
Canadian.....	3,030	1,855,196,753	25,674	15,045,710	22,376,678,151	1,487
British.....	175	136,097,504	904	371,761	597,728,730	1,608
Foreign.....	3,092	652,210,058	19,445	5,894,430	8,823,364,196	1,497
1967						
Canadian.....	3,230	2,674,591,521	26,488	16,767,502	26,162,304,475	1,560
British.....	153	53,580,523	962	415,639	690,782,465	1,662
Foreign.....	2,587	648,296,658	19,205	6,332,388	9,590,553,704	1,515

6.—Insurance Death Rates in Canada, 1965-67

Type of Insurer	1965			1966			1967		
	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Ter- minated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary.....	8,410,880	48,932	5.8	8,538,984	49,068	5.7	8,668,603	51,048	5.9
All companies, industrial.....	1,884,620	28,564	15.2	1,764,530	28,096	15.9	1,655,985	27,082	16.4
Fraternal benefit societies.....	500,272	4,231	8.5	506,337	4,292	8.5	499,099	4,264	8.5
Totals.....	10,795,772	81,727	7.6	10,809,851	81,456	7.5	10,823,687	82,394	7.6

Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 7 and 8 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising outside of Canada as well as in Canada.

7.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1965-67.

Assets and Liabilities	1965	1966	1967
	\$	\$	\$
Canadian Companies			
Total Assets¹	12,096,778,697	12,853,858,461	13,626,972,600
Bonds	4,995,956,689	5,055,295,120	5,253,126,497
Stocks	719,432,914	783,982,471	874,266,527
Mortgage loans on real estate	4,987,262,755	5,455,331,459	5,741,943,237
Agreements on sale of real estate	6,510,142	6,477,839	9,765,221
Real estate	368,008,580	410,050,542	448,932,051
Policy loans	546,450,107	633,249,139	687,987,015
Cash	109,753,225	86,033,933	103,812,839
Investment income, due and accrued	120,820,730	129,192,283	135,444,589
Outstanding insurance premiums and annuity considerations	79,375,563	84,566,767	90,545,986
Shares of company's capital stock (purchased under mutualization plan)	6,850,000	4,550,000	2,725,000
Assets in segregated funds (at market values)	94,283,633	133,119,114	197,983,253
Other assets	62,074,359	72,009,794	80,440,385
Total Liabilities	11,276,552,736	11,958,874,419	12,658,277,874
Actuarial reserve for contracts in force	9,279,205,174	9,790,254,978	10,287,323,492
Outstanding claims under contracts	117,030,376	127,661,662	142,661,932
Amounts on deposit pertaining to contracts	960,802,666	1,019,876,901	1,103,913,932
Segregated funds	94,283,633	133,119,114	197,983,253
Other liabilities	825,230,887	887,961,764	926,395,805
Surplus	800,590,482	873,904,653	946,118,659
Capital stock paid up	19,635,479	21,079,389	22,576,067
British Companies			
Assets in Canada²	859,121,919	885,294,932	958,151,715
Bonds	386,116,676	373,113,238	392,435,853
Stocks	125,309,122	115,970,133	136,226,973
Mortgage loans on real estate	283,169,519	320,643,405	342,814,713
Real estate	23,544,883	25,795,235	25,957,071
Policy loans	15,454,409	18,594,994	21,941,397
Cash	1,578,373	1,989,235	2,008,565
Investment income, due and accrued	3,458,755	3,810,629	4,003,436
Outstanding insurance premiums and annuity considerations	2,699,208	2,796,692	2,643,604
Assets in segregated funds	3,052,105	4,532,706	7,541,173
Other assets	14,738,869	18,048,716	22,578,930
Liabilities in Canada	795,438,914	855,193,736	932,293,118
Actuarial reserve for contracts in force	771,209,334	823,066,690	894,701,874
Outstanding claims under contracts	5,287,396	5,269,899	5,964,858
Segregated funds	2,427,209	4,082,379	7,229,010
Other liabilities	16,514,925	22,774,768	24,397,376
Excess of assets over liabilities in Canada	63,683,005	30,101,247	25,858,597
Foreign Companies			
Assets in Canada²	2,637,898,281	2,135,135,273	2,252,891,395
Bonds	1,174,236,864	1,158,620,762	1,194,334,588
Stocks	2,950,300	2,665,580	2,906,975
Mortgage loans on real estate	698,196,664	799,499,488	872,205,714
Real estate	18,957,589	19,307,312	18,755,326
Policy loans	90,259,149	96,383,860	102,446,628
Cash	17,040,399	19,100,226	19,438,500
Investment income, due and accrued	23,647,943	25,431,687	27,818,854
Outstanding insurance premiums and annuity considerations	10,442,969	12,082,623	12,060,387
Other assets	2,166,404	2,043,735	2,924,423
Liabilities in Canada	1,879,615,694	1,975,201,893	2,065,216,461
Actuarial reserve for contracts in force	1,693,024,707	1,765,260,204	1,837,788,956
Outstanding claims under contracts	26,993,406	30,026,761	32,487,493
Other liabilities	159,597,581	179,914,838	194,940,012
Excess of assets over liabilities in Canada	158,282,587	159,933,470	187,674,934

¹ At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable), subject to the provisions of Subsect. (4) of Sect. 71 of the Canadian and British Insurance Companies Act.

² At market values.

8.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1965-67.

Revenue and Expenditure	1965	1966	1967
	\$	\$	\$
Canadian Companies			
Total Revenue	2,029,030,933	2,140,991,180	2,274,214,119
Insurance premiums and annuity considerations.....	1,360,933,717	1,408,304,664	1,481,704,860
Investment income.....	633,463,342	688,988,222	743,522,152
Sundry items.....	34,633,874	43,698,394	48,987,107
Total Expenditure	1,931,232,466	2,021,969,262	2,163,124,895
Claims incurred.....	745,194,637	827,252,918	872,779,132
Normal increase in actuarial reserve.....	546,065,870	501,665,617	532,351,537
Taxes, licences and fees.....	38,773,947	41,567,354	49,643,543
Commissions and general expenses.....	304,891,500	329,274,266	355,140,752
Sundry items.....	95,730,238	107,006,701	118,873,527
Dividends to policyholders.....	182,799,181	196,959,241	216,519,912
Increase in provision for profits to policyholders.....	17,777,093	21,243,165	17,816,492
Analysis of Increase in Surplus—			
Excess of revenue over expenditure.....	97,798,467	116,021,918	111,089,224
Net capital gain on investments.....	-8,159,625	-10,494,385	-6,077,361
Other credits to surplus (net).....	1,199,467 ¹	5,711,983 ¹	12,937,024 ¹
Net increase in special reserves or funds.....	-8,428,484	-21,029,248	-20,415,473
Special increase in actuarial reserve.....	-9,004,548	-13,228,763	-22,337,756
Dividends to shareholders.....	-2,726,995	-3,662,001	-3,581,991
Increase in surplus (policyholders and shareholders).....	70,878,282	73,319,504	71,613,667
British Companies			
Revenue in Canada	151,481,735	149,668,702	164,109,694
Insurance premiums and annuity considerations.....	102,521,936	95,658,583	103,647,320
Investment income.....	46,481,259	51,745,531	56,966,099
Sundry items.....	2,478,540	2,264,588	3,496,275
Expenditure in Canada	79,964,103	92,859,054	94,838,908
Claims incurred.....	43,338,044	53,700,409	49,632,776
Taxes, licences and fees.....	1,620,962	1,875,066	2,284,524
Commissions and general expenses.....	22,266,515	24,321,344	26,863,706
Other expenditure.....	3,463,006	2,791,170	3,430,745
Dividends to policyholders.....	9,275,576	10,171,065	12,618,157
Foreign Companies			
Revenue in Canada	411,064,352	441,090,586	473,580,036
Insurance premiums and annuity considerations.....	282,502,239	300,488,361	317,220,266
Investment income.....	107,689,243	117,719,567	130,186,017
Sundry items.....	20,872,870	22,882,658	26,173,753
Expenditure in Canada	306,736,360	336,444,571	358,636,278
Claims incurred.....	153,345,061	165,150,142	175,676,731
Taxes, licences and fees.....	19,056,414	22,509,535	23,603,605
Commissions and general expenses.....	65,151,502	68,781,291	72,644,944
Other expenditure.....	17,861,678	23,147,752	23,538,462
Dividends to policyholders.....	51,321,705	56,855,851	62,972,536

¹ Includes amounts written off shares purchased under mutualization plan.

Subsection 4.—Life Insurance in Canada Transacted by Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table 9 gives statistics of life insurance in Canada transacted by fraternal benefit societies and Table 10 shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of

Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables 9 and 10 relate to the Canadian societies registered by the federal Department of Insurance; there were 14 such societies at the end of 1967.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, although forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not been licensed previously by the provinces have since obtained federal authority to transact business. At the end of 1967 there were 34 foreign fraternal benefit societies federally registered to transact business in Canada, although two of these do not grant life insurance benefits.

9.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1965-67

Item	1965	1966	1967
Canadian Societies			
Premiums.....	\$ 13,297,856	12,340,944	13,327,778
Claims incurred.....	\$ 6,065,474	6,756,825	7,280,187
New certificates effected.....	No. 31,216	36,187	55,984
Certificates in force Dec. 31.....	\$ 128,415,057	164,929,528	208,138,924
	No. 322,142	330,415	357,461
Certificates ceased by death or maturity.....	\$ 705,262,426	793,798,785	902,548,080
	No. 3,717	3,885	4,194
	\$ 3,867,478	4,088,497	4,563,419
Foreign Societies			
Premiums.....	\$ 6,024,955	6,411,860	6,413,741
Claims incurred.....	\$ 3,251,190	3,517,566	3,514,533
New certificates effected.....	No. 14,951	15,158	12,085
Certificates in force Dec. 31.....	\$ 32,447,680	36,852,788	35,576,506
	No. 153,779	155,500	150,661
Certificates ceased by death or maturity.....	\$ 257,535,185	274,204,054	282,286,117
	No. 2,097	2,158	2,016
	\$ 2,034,703	2,187,626	2,087,845

10.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1965-67

Item	1965	1966	1967
Canadian Societies¹			
	\$	\$	\$
Assets.....	261,079,632	289,042,122	318,587,654
Bonds.....	170,829,356	186,366,346	205,015,952
Stocks.....	13,950,242	14,464,714	15,953,699
Mortgage loans on real estate.....	53,042,282	62,615,322	57,450,919
Agreements of sale of real estate.....	25,385	126,611	138,256
Real estate.....	4,375,467	4,152,212	16,217,515
Certificate loans and liens.....	9,577,773	10,533,411	11,799,367
Cash.....	2,000,889	2,242,930	3,150,812
Investment income, due and accrued.....	2,274,005	2,741,934	2,898,816
Outstanding premiums, contributions and dues.....	4,154,907	4,468,448	4,718,960
Other.....	849,326	1,330,194	1,243,358
Liabilities and Surplus.....	261,079,632	289,042,122	318,587,654
Actuarial reserve.....	189,112,743	207,814,223	227,574,522
Outstanding claims.....	2,607,084	3,231,649	3,699,832
Amounts on deposit.....	1,190,719	1,553,289	2,049,484
Other.....	40,504,582	46,922,770	57,190,130
Surplus.....	27,664,504	29,515,191	28,073,686
Revenue.....	62,333,997	67,039,111	73,571,970
Premiums, contributions and dues.....	48,858,947	51,783,799	56,634,217
Investment income.....	12,485,643	13,995,589	15,614,772
Other.....	889,407	1,259,723	1,322,981

¹ All funds, business in and out of Canada.

**10.—Financial Statistics for Fraternal Benefit Societies under Federal Registration,
1965-67—concluded**

Item	1965	1966	1967
	\$	\$	\$
Canadian Societies¹—concluded			
Expenditure.....	58,115,591	61,757,771	70,678,496
Claims incurred.....	15,698,119	17,376,997	19,140,736
Increase in actuarial reserve.....	17,743,957	18,695,807	19,767,568
Taxes, licences and fees.....	155,010	187,383	305,656
Commissions.....	7,923,360	8,369,372	8,774,670
General expenses.....	9,915,848	10,476,753	13,429,755
Other.....	1,497,241	1,512,164	1,624,569
Dividends to members.....	3,931,950	4,611,707	6,402,283
Increase in provision for dividends to members.....	1,250,106	527,588	1,233,259
Analysis of Increase in Surplus—			
Excess of revenue over expenditure.....	4,218,406	5,281,340	2,893,474
Net capital gain on investments.....	—284,821	167,707	1,019,787
Other credits to surplus (net).....	113,118	268,588	122,183
Net increase in special reserves.....	—2,211,892	—3,861,545	—5,179,147
Increase in surplus.....	1,834,811	1,856,090	—1,143,703
Foreign Societies²			
Assets.....	61,746,744	64,090,568	64,850,148
Bonds.....	52,493,353	54,353,672	53,456,934
Stocks.....	744,055	620,614	707,591
Mortgage loans on real estate.....	2,109,674	2,643,433	3,979,907
Certificate loans and liens.....	3,213,760	3,317,237	3,469,857
Cash.....	2,209,887	2,123,944	2,109,956
Investment income, due and accrued.....	776,205	833,776	917,153
Outstanding premiums, contributions and dues.....	199,309	196,597	206,774
Other.....	501	1,295	1,976
Liabilities.....	50,682,836	52,698,948	54,543,371
Actuarial reserve.....	45,783,893	47,576,764	49,030,535
Outstanding claims.....	490,568	516,199	578,265
Other.....	4,408,375	4,605,985	4,934,571
Revenue.....	11,349,054	11,623,790	12,053,946
Premiums, contributions and dues.....	7,979,468	8,054,960	8,094,992
Investment income.....	2,798,603	3,010,223	3,424,021
Other.....	570,983	558,607	534,933
Expenditure.....	6,648,293	7,044,285	7,126,382
Claims incurred.....	4,103,095	4,382,976	4,389,434
Taxes, licences and fees.....	85,604	108,584	110,364
Commissions.....	572,346	634,242	622,641
General expenses.....	635,474	664,742	731,586
Other.....	517,870	425,618	401,238
Dividends to members.....	733,904	828,123	871,119

¹ All funds, business in and out of Canada.² All funds, business in Canada only.

**Subsection 5.—Life Insurance Effectuated and in Force Outside Canada by
Canadian Companies under Federal Registration**

In this Subsection, there are given for the years 1966 and 1967 summary statistics of insurance effectuated and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The data given are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies.

Canadian life insurance companies operating under federal registration at Dec. 31, 1967 had life insurance in force amounting to \$23,636,407,827 in countries outside Canada. Insurance in force in currencies other than Canadian dollars amounted to \$23,589,055,263; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to \$58,444,750,160

at Dec. 31, 1967, and the total business on the books of these companies, in and out of Canada, amounted to \$82,081,157,987. Thus, over 28 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada. In connection with their business outside Canada, the Canadian life insurance companies registered by the Federal Government held, at the end of 1967, Commonwealth and foreign investments in the amount of \$4,140,410,815.

Approximately 73 p.c. of all business in force in currencies other than Canadian is in United States currency and 16 p.c. is in sterling. From a slightly different point of view, approximately 20 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 80 p.c. in currencies of foreign countries.

11.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1966 and 1967.

Currency	1966		1967	
	Insurance Effectuated	Insurance in Force	Insurance Effectuated	Insurance in Force
	\$	\$	\$	\$
Commonwealth Currencies	741,928,820	4,822,736,109	858,648,625	4,827,587,795
Pounds—				
Sterling.....	588,085,366	3,732,318,711	656,571,721	3,672,190,564
British West Indies, Bermuda and Jamaica	53,756,761	274,602,326	61,747,268	306,620,968
Cyprus.....	—	9,870,265	—	9,256,691
Rhodesia.....	—	102,578,810	—	90,380,032
Zambia.....	—	16,821,082	—	14,518,533
Dollars—				
Australia.....	—	25,360	—	24,460
Bahamas.....	14,914,080	78,468,572	12,807,763	87,935,714
British Honduras.....	—	502,665	—	509,020
British West Indies, East Caribbean, Guy- ana, Trinidad and Tobago.....	81,810,285	520,465,593	126,019,047	567,999,584
Hong Kong.....	3,362,328	29,864,097	1,502,826	29,417,307
Malaysia.....	—	20,787,150	—	10,574,935
Singapore ¹	—	—	—	7,395,572
Rupees—				
Ceylon.....	—	20,152,109	—	16,247,927
India.....	—	2,387,904	—	1,365,136
Pakistan.....	—	680,334	—	584,250
Shillings—				
East Africa.....	—	13,211,131	—	12,567,102
Foreign Currencies	2,439,162,273	16,964,706,730	2,533,317,106	18,761,467,468
Bahts (Thailand).....	—	4,446	—	2,071
Bolivars (Venezuela).....	9,705,605	70,822,140	4,416,660	34,252,291
Cordobas (Nicaragua).....	—	1,613	—	1,613
Dollars (United States of America).....	2,201,802,276	15,448,642,279	2,280,738,423	17,212,062,301
Francs (Belgium).....	—	659	—	727
Francs (France).....	—	33	—	37
Francs (Switzerland).....	27,000	278,200	—	250,200
Guilders (Netherlands).....	—	175,776	—	145,371
Guilders (Netherlands Antilles).....	5,809,381	27,927,965	7,663,546	31,978,427
Kyats (Burma).....	—	14,290	—	8,372
Pesos (Argentina).....	—	971,787	—	257,348
Pesos (Colombia).....	—	3,360	—	2,560
Pesos (Cuba).....	—	43,554,521	—	34,498,950
Pesos (Dominican Republic).....	14,535,993	56,498,358	12,995,332	62,967,780
Pesos (Mexico).....	—	2,073,784	—	1,902,257
Pesos (Philippines).....	17,246,175	95,580,815	24,084,426	103,468,971
Pounds (United Arab Republic).....	—	6,643,548	—	5,722,305
Pounds (Republic of Ireland).....	24,479,560	148,258,000	29,193,516	146,220,127
Pounds (Israel).....	35,639,893	88,730,007	29,069,693	113,496,805
Rand (South Africa).....	129,916,390	974,495,973	145,155,510	1,014,221,483
Soles (Peru).....	—	25,867	—	7,464
Yen (Japan).....	—	3,309	—	8
Totals	3,181,091,093	21,787,442,839	3,391,965,731	23,589,055,263

¹ Included in Malaysia prior to 1967.

Section 2.—Fire and Casualty Insurance

At the end of 1967 there were 253 companies registered by the Federal Government to transact fire insurance in Canada (83 Canadian, 62 British and 108 foreign). Of these companies, 245 (78 Canadian, 60 British and 107 foreign) were also registered to transact casualty insurance. In addition, 112 companies were registered by the Federal Government to transact casualty insurance but not fire insurance (30 Canadian, 7 British and 75 foreign). Of the companies registered to transact fire and/or casualty insurance, 88 were also registered to transact life insurance; 14 of these were registered for fire, life and casualty insurance and 74 for life and casualty but not fire insurance. It should be noted also that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 30 registered fraternal benefit societies transacting accident and sickness insurance, of which 28 also transacted life insurance.

The operations analysed in the tables of this Section, with the exception of Table 12, include only those companies under federal registration. As shown in Table 12, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation and many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis. The table relates to insurance companies only; no data are included for fraternal benefit societies.

12.—Fire and Casualty Insurance Transacted in Canada, 1966 and 1967

Item	1966		1967	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$
Fire Insurance				
Federally registered companies ¹	258,034,475	133,037,355	287,551,668	137,448,538
Provincial licensees.....	41,983,324	18,625,208	45,475,040	22,056,317
In province by which incorporated.....	37,412,857	16,837,688	40,139,065	18,653,558
Outside province by which incorporated....	4,570,467	1,787,520	5,335,975	3,402,759
Lloyds, London.....	12,203,585	19,706,286	12,444,965	8,913,882
Totals, Fire¹.....	312,221,384	171,368,849	345,471,673	168,418,737
Casualty Insurance				
Federally registered companies ¹	1,104,929,135	694,668,410	1,224,607,551	761,799,624
Provincial licensees.....	115,812,422	67,428,676	132,879,975	78,036,064
In province by which incorporated.....	102,415,276	60,091,575	117,085,615	68,442,508
Outside province by which incorporated....	13,397,146	7,337,101	15,794,360	9,593,556
Lloyds, London.....	55,055,867	38,122,917	59,977,183	50,955,108
Totals, Casualty¹.....	1,275,797,424	800,229,003	1,417,464,709	890,790,796
Totals, Fire and Casualty¹.....	1,588,018,808	971,588,852	1,762,936,382	1,059,209,533

¹ Registered or licensed reinsurance deducted from all companies.

Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1958 to 1967 are given in Table 13 and the figures for 1967 are classified by province and nationality of company in Table 14.

13.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1958-67

(Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	\$	\$		\$	\$
1958.....	177,364,450	88,151,837	1963.....	196,915,780	125,252,467
1959.....	196,702,991	96,054,754	1964.....	205,276,365	110,502,299
1960.....	200,735,958	100,501,460	1965.....	224,356,436	111,570,118
1961.....	200,859,825	96,343,611	1966.....	236,699,967	120,452,654
1962.....	200,768,495	104,472,605	1967.....	265,400,312	124,354,649

14.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1967

(Registered or licensed reinsurance deducted)

Province or Territory	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$	\$	\$
Newfoundland.....	1,459,362	565,328	1,504,979	440,705	1,382,819	366,771
Prince Edward Island.....	480,170	192,906	476,475	244,516	229,894	134,882
New Brunswick.....	4,214,868	2,050,018	3,225,905	1,620,283	2,484,538	1,074,428
Quebec.....	3,531,639	1,770,782	2,807,092	1,761,871	2,757,420	1,726,517
Ontario.....	36,930,431	15,162,474	20,229,786	8,818,882	32,204,195	16,668,894
Manitoba.....	45,018,572	21,299,151	22,627,410	12,638,642	38,215,447	18,503,726
Saskatchewan.....	6,847,147	2,983,932	2,367,241	1,531,279	2,831,477	1,532,812
Alberta.....	4,391,620	1,703,908	1,229,494	480,976	1,863,616	825,906
British Columbia.....	8,236,415	3,718,086	3,834,458	1,825,743	4,873,920	2,523,760
Yukon and Northwest Territories...	11,626,658	6,052,132	6,991,632	3,801,592	11,887,191	4,943,666
	261,678	177,839	290,259	146,560	237,960	159,571
Canada.....	122,993,460	55,676,556	65,584,731	33,311,049	98,968,477	43,460,933

Subsection 2.—Fire Losses

The information in Tables 15 to 17, which deals with the loss of property and life caused by fire, has been summarized from the annual report *Fire Losses in Canada* prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses, not included in these figures, in 1966 amounted to \$5,894,495 from 1,642 fires; average federal losses for the period 1957-66 amounted to \$4,381,311 from an annual average of 2,033 fires.

15.—Statistics of Fire Losses, 1957-66

(Excludes forest fires and Federal Government property losses)

Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire
	No.	\$	\$	No.		No.	\$	\$	No.
1957.....	82,088	133,492,277	8.04	638	1962.....	85,585	140,144,643	7.55	626
1958.....	86,919	120,258,696	7.04	532	1963.....	83,027	154,051,629	8.15	553
1959.....	84,241	124,532,238	7.12	560	1964.....	75,306	148,376,961	7.71	603
1960.....	79,611	129,327,258	7.24	566	1965.....	68,432	144,179,977	7.37	589
1961.....	83,706	128,262,047	7.03	556	1966.....	68,463	162,718,013	8.17	578

The provincial property losses for 1963-66 given in Table 16 include both insured and uninsured losses.

16.—Fire Losses, by Province, 1963-66

(Excludes forest fires and Federal Government property losses)

Province or Territory	1963	1964	1965	1966		
	Property Loss			Fires Reported	Property Loss	Loss per Capita
	\$	\$	\$	No.	\$	\$
Newfoundland.....	3,368,293	1,249,077	1,008,886	498	12,755,810	25.26
Prince Edward Island.....	859,773	490,172	829,417	358	885,967	8.13
Nova Scotia.....	3,332,053	3,896,713	3,627,629	2,302	5,078,418	6.68
New Brunswick.....	4,529,053	4,285,010	3,766,380	1,409	5,914,333	9.43
Quebec.....	53,837,155	50,101,705	50,677,285	22,156	44,776,585	7.80
Ontario.....	52,421,532	48,930,025	49,226,951	23,199	44,786,691	6.50
Manitoba.....	6,806,691	6,438,740	6,155,707	3,343	7,362,495	7.69
Saskatchewan.....	4,701,317	5,329,669	4,087,775	2,114	3,786,903	3.97
Alberta.....	9,813,646	11,560,866	9,997,323	5,908	12,005,858	8.20
British Columbia.....	13,792,731	14,985,863	14,137,784	6,903	23,145,579	12.43
Yukon and Northwest Territories..	589,385	1,109,121	664,840	273	2,219,374	54.13
Canada.....	154,051,629	148,376,961	144,179,977	68,463	162,718,013	8.17

17.—Fire Losses, by Type of Property and Cause of Fire, 1964-66

(Excludes forest fires and Federal Government property losses)

Type of Property and Reported Cause of Fire	1964		1965		1966	
	Fires Reported	Property Loss	Fires Reported	Property Loss	Fires Reported	Property Loss
	No.	\$	No.	\$	No.	\$
Type of Property						
Residential.....	53,396	39,674,160	47,619	46,331,929	47,554	41,040,560
Mercantile.....	6,543	43,439,189	4,018	33,746,812	4,092	33,613,815
Farm.....	5,418	14,779,996	6,154	13,959,035	6,117	16,138,668
Manufacturing.....	1,870	24,297,338	1,598	24,275,046	1,313	36,527,870
Institutional and assembly.....	1,245	12,129,277	1,093	7,768,020	1,245	11,736,416
Miscellaneous.....	6,834	14,057,001	7,950	18,099,135	8,142	23,660,684
Totals.....	75,306	148,376,961	68,432	144,179,977	68,463	162,718,013
Reported Cause						
Smokers' carelessness.....	23,156	8,245,166	21,563	8,668,874	22,140	6,447,369
Stoves, furnaces, boilers and smoke pipes.....	4,653	8,713,654	4,238	9,348,707	3,881	7,882,082
Electrical wiring and appliances.....	9,007	19,486,867	7,889	18,852,123	8,554	19,848,994
Matches.....	2,015	2,030,027	2,374	3,466,694	2,392	2,664,474
Defective and overheated chimneys and flues.....	1,911	2,133,072	1,739	1,800,013	1,335	2,174,857
Hot ashes, coals and open fires.....	1,290	1,531,309	1,042	1,389,128	1,116	1,137,888
Petroleum and its products.....	1,690	5,437,823	1,760	3,952,555	1,854	5,510,739
Lights, other than electric.....	1,380	3,050,987	1,605	2,847,720	1,550	3,539,591
Lightning.....	2,793	2,209,512	2,273	2,497,727	2,407	3,209,264
Sparks on roofs.....	249	328,782	535	1,199,777	329	996,710
Exposure fires.....	537	1,090,986	527	1,496,691	508	5,124,982
Spontaneous ignition.....	401	2,461,143	346	2,146,675	355	2,910,064
Incendiarism.....	992	7,159,986	953	4,001,146	1,091	5,270,992
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.).....	9,985	11,350,928	8,667	10,377,033	9,193	20,540,024
Unknown.....	15,247	73,146,719	12,921	72,135,114	11,758	75,469,983

Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 18. These figures relate only to companies registered by the Federal Government.

18.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1967

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Class of Insurance	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
Aircraft.....	694,453	6,166,273	3,381,681	10,242,407	9,116,069	7,923,907
Automobile.....	314,489,798	114,511,974	194,166,299	623,168,071	597,317,615	367,877,946
Boiler—						
Boiler.....	3,896,515	883,810	2,396,761	7,177,086	7,951,809	1,528,589
Machinery.....	1,912,029	286,848	1,671,826	3,870,703	3,977,540	3,929,125
Credit.....	364,982	—	677,409	1,042,391	1,070,937	398,635
Earthquake.....	81,717	30,149	99,990	211,856	164,938	—5,304
Explosion.....	—	—	90	90	90	—
Forgery.....	102,892	10,497	8,272	121,661	146,312	14,172
Guarantee—						
Fidelity.....	2,422,181	1,090,992	3,393,687	6,906,860	6,437,584	3,234,406
Surety.....	6,445,623	1,119,249	11,933,036	19,497,908	18,364,539	2,686,000
Hail.....	595,445	436,977	2,754,724	3,787,146	3,806,873	1,269,747
Inland transportation.....	2,635,808	1,868,659	5,518,005	10,022,472	9,762,155	4,012,841
Liability—						
Public liability.....	25,548,109	12,799,073	20,882,002	59,229,184	55,606,781	34,244,855
Employers' liability.....	3,530,695	3,057,767	1,943,201	8,531,663	8,313,341	3,649,140
Livestock.....	41,887	181,241	126,867	349,995	329,798	194,724
Mortgage.....	1,076,192	—	—	1,076,192	391,985	11,013
Personal accident and sickness.....	192,675,043	6,781,964	163,238,543	362,695,550	359,070,716	271,614,553
Personal property.....	23,279,212	15,841,235	27,011,832	66,132,279	63,692,451	32,673,909
Plate glass.....	1,668,962	928,221	1,030,711	3,627,894	3,361,277	1,950,570
Real property.....	901,157	793,354	1,615,612	3,310,123	3,144,574	1,475,933
Sprinkler leakage.....	—	—	1	1	157	—600
Theft.....	4,506,678	2,389,939	3,351,719	10,248,336	9,725,351	4,986,960
Title.....	—	—	109,136	109,136	100,759	—1,625
Weather.....	—	—	7,436	7,436	7,436	2,003
Windstorm.....	79,431	90	18,481	98,002	105,352	60,342
Totals	586,948,809	169,178,312	445,337,321	1,201,464,442	1,161,966,439	743,731,841

Subsection 4.—Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables 19 and 20 relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

19.—Total Assets and Liabilities for Fire and Casualty Insurance of Canadian Companies and Assets and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1965-67.

Assets and Liabilities	1965	1966	1967
	\$	\$	\$
Canadian Companies¹			
Total Assets²	870,501,556	973,878,316	1,099,008,731
Bonds.....	515,489,370	575,345,194	635,905,176
Stocks.....	121,517,056	159,959,343	199,769,018
Mortgage loans and agreements of sale.....	33,319,405	38,269,552	43,623,705
Real Estate.....	17,627,140	17,370,661	17,307,780
Cash.....	47,329,785	48,337,007	60,486,791
Investment income, due and accrued.....	6,856,043	7,938,241	9,489,497
Amounts due from agents and uncollected premiums.....	78,250,533	90,617,922	103,585,492
Other assets.....	54,080,065	55,586,919	63,875,772
Adjustment for excess of book value over market value.....	-3,967,811	-19,546,523	-35,034,500
Total Liabilities	625,039,806	709,415,985	799,514,355
Reserve for unearned premiums.....	233,316,991	259,235,248	285,115,011
Additional policy reserves.....	7,976,935	9,058,525	10,631,519
Provision for unpaid claims.....	242,846,584	287,712,735	333,121,170
Investment, contingency or general reserves.....	33,248,079	28,299,759	27,057,543
Other liabilities.....	107,651,217	125,109,718	143,589,112
Capital stock paid ³	50,675,830	51,361,943	53,127,198
Amount transferred from other funds.....	13,549,148 ^r	16,218,135 ^r	17,964,175
Surplus.....	181,236,772	196,882,253	228,403,003
British Companies⁴			
Assets in Canada⁵	371,038,935	380,746,603	402,464,629
Bonds.....	264,296,214	270,446,138	271,025,413
Stocks.....	38,019,157	40,027,460	51,241,576
Mortgage loans and agreements of sale.....	3,673,701	4,529,688	5,239,478
Real Estate.....	3,844,001	2,806,676	2,756,973
Cash.....	11,205,618	12,513,103	13,928,593
Investment income, due and accrued.....	2,868,406	3,125,631	3,411,641
Amounts due from agents and uncollected premiums.....	35,574,013	38,600,389	42,030,286
Other assets.....	11,557,825	8,697,518	12,830,669
Liabilities in Canada	250,764,647	262,361,137	275,493,727
Reserve for unearned premiums.....	114,971,031	117,385,009	120,453,858
Additional policy reserves.....	1,261,987	1,281,580	1,220,199
Provision for unpaid claims.....	114,495,087	126,042,145	129,928,919
Other liabilities.....	20,036,542	17,652,403	23,890,751
Excess of assets over liabilities in Canada.....	120,274,288	118,385,466	126,970,902
Foreign Companies⁴			
Assets in Canada⁵	587,450,695	679,655,250	757,931,778
Bonds.....	456,687,718	533,338,105	568,410,527
Stocks.....	22,324,100	24,906,449	35,316,879
Mortgage loans and agreements of sale.....	60,459	57,088	2,051,488
Real Estate.....	4,720,163	5,797,675	5,608,386
Cash.....	31,468,188	31,491,322	35,681,296
Investment income, due and accrued.....	5,924,430	7,498,572	8,613,986
Amounts due from agents and uncollected premiums.....	47,265,707	53,020,746	60,623,182
Other assets.....	18,999,930	23,455,293	41,620,034
Liabilities in Canada	427,601,557	485,127,110	552,090,607
Reserve for unearned premiums.....	201,488,734	217,936,320	240,682,923
Additional policy reserves.....	10,219,696	11,095,353	13,606,447
Provision for unpaid claims.....	175,464,566	204,410,487	235,775,651
Other liabilities.....	40,428,561	51,684,950	62,025,586
Excess of assets over liabilities in Canada.....	159,849,138	194,528,140	205,841,171

¹ Business in and out of Canada. ² At book values. The amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value is shown separately as a deduction to assets. Including guarantee fund. ³ Business in Canada only. ⁴ At market values.

20.—Underwriting Account and Analysis of Surplus of Canadian Companies and Underwriting Account and Investment Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1966 and 1967.

Item	1966	1967
	\$	\$
Canadian Companies		
(In and out of Canada)		
Underwriting Account—		
Underwriting income earned.....	665,869,662	749,389,561
Less disbursements:		
Claims incurred.....	425,338,236	471,768,317
Commissions and general expenses.....	202,658,810	227,341,583
Premium taxes, licences and fees.....	16,131,497	17,665,435
Dividends to policyholders.....	8,892,542	10,106,406
Underwriting gain or loss (—).....	12,848,577	22,507,820
Analysis of Increase in Surplus—		
Underwriting gain or loss (—).....	12,848,577	22,507,820
Investment income.....	38,295,533	45,314,679
Other investment account items.....	—17,198,133	—18,487,656
Income taxes.....	—12,092,103	—23,351,586
Dividends to shareholders.....	—6,166,038	—5,323,970
Other surplus items.....	638,446	1,852,596
Premium on capital stock or surplus paid in.....	1,000,500	8,918,816
Increase in surplus.....	17,326,782	31,430,699
British Companies		
Underwriting Account in Canada—		
Underwriting income earned.....	224,590,583	231,836,061
Less disbursements:		
Claims incurred.....	136,460,810	134,125,157
Commissions and general expenses.....	86,036,122	86,161,780
Premium taxes, licences and fees.....	5,380,967	5,461,126
Dividends to policyholders.....	—	49,033
Underwriting gain or loss (—).....	—3,287,316	6,038,965
Income taxes.....	61,218	279,276
Investment income.....	13,279,609	15,086,788
Foreign Companies		
Underwriting Account in Canada—		
Underwriting income earned.....	466,225,079	520,188,362
Less disbursements:		
Claims incurred.....	295,259,993	320,940,253
Commissions and general expenses.....	137,275,648	153,918,935
Premium taxes, licences and fees.....	11,251,193	12,522,352
Dividends to policyholders.....	5,746,285	8,289,614
Underwriting gain or loss (—).....	16,691,960	24,517,208
Income taxes.....	5,340,376	6,409,169
Investment income.....	26,512,288	31,412,025

Section 3.—Government Insurance

Federal Government Insurance

In recent years, various insurance schemes have been adopted by the Federal Government or undertaken co-operatively by the federal and provincial governments. Information on unemployment insurance, hospital insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

Deposit Insurance.—During 1967, deposit insurance became available through the formation, by SC 1967, c. 71, of the Canada Deposit Insurance Corporation. The Corporation was established to provide, for the benefit of persons having deposits with a member of the Corporation, insurance against the loss of deposits up to a maximum of \$20,000 for any one depositor.

Membership in the Deposit Insurance Corporation is obligatory for chartered banks, Quebec savings banks and those federally incorporated loan and trust companies that accept deposits from the public. Provincially incorporated loan and trust companies that accept deposits from the public are eligible to apply for membership if they have the consent of the province of incorporation.

The definition of deposits, as set out in the general by-law of the Corporation, might be summarized as money received by a member institution that is repayable on demand or notice and money that is repayable on a fixed date not more than five years after the date on which the money is received. Deposits not payable in Canada or in Canadian currency are not insured.

Provincial Government Insurance

Saskatchewan.—The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1967 amounted to \$13,110,939 and earned surplus to \$726,034. The total amount made available to the Government Finance Office of the Province of Saskatchewan from 1945 to Dec. 31, 1967 was \$6,870,598. Assets at the latter date were \$30,723,065, of which \$15,400,000 was invested in bonds and debentures issued by the Province of Saskatchewan and by Saskatchewan schools, municipalities and hospitals. Independent insurance agents numbering 616 sell government insurance throughout the province.

The Automobile Accident Insurance Act, administered by the Saskatchewan Government Insurance Office on behalf of the provincial government, provides a comprehensive automobile accident insurance plan for the protection of the public in this province. Premiums paid by motorists create a fund from which benefits are paid in the event of death, injuries and damages sustained in automobile accidents. Any surplus over payments is used to increase benefits, reduce premiums, or absorb deficits in periods of high accident frequency. The surplus is not transferable to the general operations of the Saskatchewan Government Insurance Office, nor is any surplus credited to the provincial government. The plan provides for public liability insurance, with an inclusive limit of \$35,000 for bodily injury and property damage, as well as comprehensive and collision coverage subject to a \$200 deductible for private passenger cars. Rates vary from \$5 a year for older farm trucks to \$74 for late-model private passenger cars, and also vary for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to Dec. 31, 1967, more than \$127,000,000 was paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Office Librarian, Saskatchewan Government Insurance Office, Regina, Sask.

Alberta.—Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. Although both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Further information on provincial insurance matters may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

CHAPTER XXVI.—DEFENCE

CONSPECTUS

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The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

PART I.—THE CANADIAN FORCES AND DEFENCE RESEARCH*

Section 1.—The Department of National Defence

The control and management of all matters relating to national defence, the Canadian Armed Forces and the Defence Research Board are the responsibility of the Minister of National Defence; the duties and functions relating to civil emergency operations in peace and war have also been assigned to the Department of National Defence, with the Canadian Forces undertaking the role.

The Canadian Forces Reorganization Act, which came into force on Feb. 1, 1968, "unified" the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force into a single service called the Canadian Armed Forces.

Effective Aug. 1, 1964, the Headquarters of the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force were integrated to form a single Canadian Forces Headquarters (CFHQ) under a single Chief of Defence Staff. The role of CFHQ is to provide military advice to the Minister of National Defence and to control and administer the Canadian Forces. CFHQ is organized into four functional Branches headed by the Vice Chief of Defence Staff, the Chief of Personnel, the Chief of Technical Services and the Comptroller General, who are responsible for advising and supporting the Chief of Defence Staff in matters relating to their assigned spheres of activity. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister, assisted by an Associate Deputy Minister, maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. Each of three Assistant Deputy Ministers administers a division of the Deputy Minister's Branch responsible for personnel, logistics and finance. Also responsible to the Deputy Minister are the Judge Advocate General, the Departmental Secretary and the Director General of Information Services.

*Prepared by the Directorate of Information Services, Department of National Defence, Ottawa.

The Defence Council meets at regular intervals to consider and advise on major policy matters. The Council consists of: the Minister of National Defence as Chairman; the Parliamentary Secretary to the Minister of National Defence; the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman of the Defence Research Board and the Vice Chief of Defence Staff as members; and a Secretary. The Branch Chiefs at CFIHQ and the Vice Chairman of the Defence Research Board are associate members.

Liaison in Other Countries

The Chief of Defence Staff, who is the Canadian military representative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to the Government and to Canadian delegations to NATO.* For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Commander of which is the principal military adviser to the Canadian High Commissioner in London; (2) the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Commander of which is the principal military adviser to the Canadian Ambassador in Washington, and is the Canadian National Liaison Representative to the Supreme Commander, Allied Command Atlantic (SACLANT) Headquarters; (3) in Brussels, a Canadian member of the NATO Military Committee in Permanent Session, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to SHAPE; and (4) Canadian Forces Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

Rates of Pay Issuable to Canadian Forces

The entire pay structure for comparable ranks in the former three services is on a uniform basis. Tables 1 and 2 contain the monthly rates of pay for officers and men, respectively, effective Oct. 1, 1968.

* Canada's contributions to NATO are outlined on p. 143.

**1.—Monthly Rates of Pay for Officers of the Canadian Armed Forces,
Effective Oct. 1, 1968**

Rank	Basic	Incentive Pay Category										
		1	2	3	4	5	6	7	8	9	10	11
		OFFICERS OTHER THAN PILOTS, RADIO NAVIGATORS, MEDICAL, DENTAL AND LEGAL										
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Second Lieutenant.....	389 ¹	...	...	...	...	...	...	...	...	...	...	...
Lieutenant.....	593	608	623	638	653	668	683	698	713	728	743	758
Lieutenant commissioned from the ranks.....	720	740	760	780	800	...	...	...	...	...	...	...
Captain.....	779	804	829	854	879	904	929	...	...	...	...	...
Major.....	996	1,028	1,060	1,092	1,124	1,156	...	...	...	...	...	...
Lieutenant-Colonel.....	1,199	1,239	1,279	1,319	1,359	...	...	...	...	...	...	...
Colonel.....	1,501	1,546	1,591	...	...	...	...	...	...	...	...	...
Brigadier-General.....	1,787	1,837	1,887	...	...	...	...	...	...	...	...	...
Major-General.....	2,110	...	...	...	...	...	...	...	...	...	...	...
Lieutenant-General.....	2,307	...	...	...	...	...	...	...	...	...	...	...

¹ \$447 payable to a Second Lieutenant who was a married officer or man prior to Oct. 1, 1966.

**2.—Monthly Rates of Pay for Men of the Canadian Armed Forces,
Other Than Flight Engineers and Observers, Effective Oct. 1, 1968**

Rank	Pay Level	Incentive Pay Category ¹	Pay Field				
			3	4	5	6	7
			\$	\$	\$	\$	\$
Private.....	1	...	225	225	225	225	225
Private.....	2	...	244	244	244	244	244
Private.....	3	...	321	325	329	333	337
Private.....	4	...	368	373	378	383	389
	4	1	385	390	396	402	407
	4	2	405	410	416	422	428
	4	3	430	436	442	448	455
Corporal.....	5(A)	...	476	495	512	530	549
	5(A)	1	481	500	517	535	554
	5(A)	2	486	505	522	540	559
	5(A)	3	493	512	529	547	566
	5(A)	4	496	515	532	550	569
	5(A)	5	499	518	535	553	572
	5(A)	6	502	521	538	556	575
Corporal ²	5(B)	...	486	505	522	540	559
	5(B)	1	491	510	527	545	564
	5(B)	2	496	515	532	550	569
	5(B)	3	503	522	539	557	576
	5(B)	4	506	525	542	560	579
	5(B)	5	509	528	545	563	582
	5(B)	6	512	531	548	566	585
Sergeant.....	6(A)	...	544	562	581	599	618
	6(A)	1	549	567	586	604	623
	6(A)	2	554	572	591	609	628
	6(A)	3	559	577	596	614	633
	6(A)	4	564	582	601	619	638
	6(A)	5	569	587	606	624	643
	6(A)	6	574	592	611	629	648
Warrant Officer.....	6(B)	...	579	597	616	634	653
	6(B)	1	584	602	621	639	658
	6(B)	2	589	607	626	644	663
	6(B)	3	594	612	631	649	668
	6(B)	4	599	617	636	654	673
	6(B)	5	604	622	641	659	678
	6(B)	6	609	627	646	664	683
Master Warrant Officer.....	7	...	627	645	663	681	699
	7	1	634	652	670	688	706
	7	2	641	659	677	695	713
	7	3	648	666	684	702	720
	7	4	655	673	691	709	727
	7	5	662	680	698	716	734
	7	6	669	687	705	723	741
Chief Warrant Officer.....	8	...	718	739	760	781	802
	8	1	727	748	769	790	811
	8	2	736	757	778	799	820
	8	3	745	766	787	808	829
	8	4	754	775	796	817	838
	8	5	763	784	805	826	847
	8	6	772	793	814	835	856

¹ Incentive pay increases at rates that vary with length of service may be granted to a man when he has met predetermined standards.

² Rate 5(B) applies to Corporals who are appointed to specific establishment positions that entail additional responsibility.

**3.—Monthly Rates of Pay for Flight Engineers and Observers,
Effective Oct. 1, 1968**

Rank	Pay Level	Incentive Pay Category ¹	Rates of Pay
			\$
Corporal	5(A)	...	624
	5(A)	1	629
	5(A)	2	634
	5(A)	3	641
	5(A)	4	644
	5(A)	5	647
	5(A)	6	650
Corporal ²	5(B)	...	634
	5(B)	1	639
	5(B)	2	644
	5(B)	3	651
	5(B)	4	654
	5(B)	5	657
	5(B)	6	660
Sergeant.....	6(A)	...	693
	6(A)	1	698
	6(A)	2	703
	6(A)	3	708
	6(A)	4	713
	6(A)	5	718
	6(A)	6	723
Warrant Officer.....	6(B)	...	728
	6(B)	1	733
	6(B)	2	738
	6(B)	3	743
	6(B)	4	748
	6(B)	5	753
	6(B)	6	758
Master Warrant Officer.....	7	...	774
	7	1	781
	7	2	788
	7	3	795
	7	4	802
	7	5	809
	7	6	816
Chief Warrant Officer.....	8	...	877
	8	1	886
	8	2	895
	8	3	904
	8	4	913
	8	5	922
	8	6	931

¹ Incentive pay increases at rates that vary with length of service may be granted to a man when he has met pre-determined standards. ² Rate 5(B) applies to Corporals who are appointed to specific establishment positions that entail additional responsibility.

Allowances Issuable to Canadian Forces.—The following are the most common entitlements, aside from pay, for members of the regular Forces. Other entitlements related to special duties and to the Reserve Forces are not shown.

Aircrew Allowance.—Aircrew allowance in varying amounts may be paid to a member of aircrew, or an officer or man undergoing flying training to become a pilot, navigator or other member of aircrew if he is not already receiving the special rate of pay applicable to pilots or navigators.

Outfit Allowance and Clothing Upkeep Allowance.—Officers receive a single payment of \$150 on appointment and Chief Warrant Officers receive \$270. Men receive a free issue of clothing on joining and thereafter a monthly clothing upkeep allowance of \$7; Navy

Warrant Officers receive \$8. Women receive a free issue of clothing on joining with an underclothing allowance of \$15, and thereafter a monthly clothing allowance of \$8.

Foreign Allowances.—Officers and men posted for duty to a country outside of Canada are entitled to allowances to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location.

Isolation Allowance.—Isolation allowance, at rates which depend on the specific location, is paid to personnel serving at isolated posts in Canada.

Submarine Allowance.—An officer or man undergoing submarine training or filling an appointment in a submarine receives from \$45 to \$115 a month, depending on rank.

Parachutist Allowance.—An officer or man undergoing parachutist training or filling a designated position requiring parachute jumping and not entitled to Air Duty Allowance is paid Parachutist Allowance at the rate of \$60 a month.

Air Duty Allowance.—An officer or man, not entitled to Aircrew or Parachutist Allowance who is training in or employed in the duties of flight attendant, flight steward, technical crewman or transport operator (air) is paid Air Duty Allowance at the rate of \$45 a month.

Sea Duty Allowance.—An officer or man serving in a ship receives from \$15 to \$45 a month depending on rank.

Section 2.—The Command Structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commitments assigned by the Government. Under this concept, all forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to discharge his responsibilities. Specifically, the Canadian Forces are formed into a Canadian Forces Headquarters and eight major commands reporting to the Chief of the Defence Staff. Canadian Forces Headquarters, in addition to its headquarters function, is responsible for the logistic support of the Forces and, for this purpose, retains operational command of major logistic units. The roles of the Commands are:—

MOBILE COMMAND

The role of Mobile Command is: to provide military units suitably trained and equipped to support United Nations or other peacekeeping/peace-restoring operations; to provide ground forces, including tactical air support, for the protection of Canadian territory; and to maintain operational readiness of combat formations in Canada required for support of overseas commitments.

The Forces assigned include: four combat groups in Canada; the Canadian Airborne Regiment; the United Nations Force in Cyprus; two tactical fighter squadrons; one transport helicopter squadron; and one tactical transport squadron of fixed-wing aircraft. The combat groups are being reorganized to perform a wide variety of roles and will be provided with air-portable equipment.

4 Canadian Mechanized Brigade Group (4 CMBG) is the Canadian contribution to NATO ground forces in Europe. It contains a surface-to-surface missile (Honest John) battery in addition to the normal self-propelled field artillery regiment.

MARITIME COMMAND

All Canadian Maritime Forces, both sea and air, are under the command of the Commander Maritime Command whose Headquarters is in Halifax. The Deputy Commander is the Commander Maritime Forces Pacific with Headquarters in Esquimalt. The role of Maritime Command is to defend Canadian interests from assault by sea and to support NATO by assisting in conducting anti-submarine warfare in the Allied Command, Atlantic. The Commander Maritime Command is the NATO Commander of the Canadian Atlantic Sub-Area of the Western Atlantic Command, under the Supreme Commander, Allied Command Atlantic (SACLANT). An additional role is to provide any sea lift required by Mobile Command.

Available to the Maritime Command are one aircraft carrier, one operational support ship (with two more being commissioned in 1969), two escort maintenance ships, 22 escorts of destroyer type, four submarines and six minesweepers; 12 *Tracker* aircraft and six *Sea King* helicopters are carried in HMCS *Bonaventure*, nine destroyers can each take one *Sea King* and a further 12 *Trackers* operate from shore in conjunction with the main maritime patrol force of four squadrons equipped with *Argus* aircraft. Four further squadrons of aircraft provide training and communication facilities within the command.

1 AIR DIVISION

1 Air Division is the Canadian contribution to the strike/reconnaissance forces available to SACEUR. The Division is operationally responsible to 4 Allied Tactical Air Force (4 ATAF) and has six squadrons equipped with CF-104 *Starfighters* located at three airfields in Germany. It is proposed to concentrate these squadrons on two airfields by mid-1969 with the closing out of one of the bases.

AIR DEFENCE COMMAND

Air Defence Command participates with the United States in the air defence of North America, through NORAD. It has command of three interceptor squadrons, two SAM squadrons, one SAGE control centre and two transcontinental radar lines. Operational control is exercised by HQ NORAD.

AIR TRANSPORT COMMAND

The role of Air Transport Command is to provide air transport support to Canadian Forces everywhere, and to conduct search and rescue operations in the Eastern Search and Rescue Area (roughly, Ontario and Quebec). It has four squadrons operating short-range and long-range cargo- and troop-carrying aircraft as well as four transport and rescue squadrons.

TRAINING COMMAND

The role of Training Command is to provide individual training for the Forces and to conduct search and rescue operations within the Western Search and Rescue Area (roughly, Manitoba, Saskatchewan and Alberta). All former training units of the RCN, the Canadian Army and the RCAF where individual training is carried out have been placed under functional control of Training Command. The Canadian Military Colleges (Royal Military College, Royal Roads and Collège militaire royal de Saint-Jean), the Staff Colleges, and medical/dental training are under the direct control of Canadian Forces Headquarters (see pp. 1159-1197). Land/Air Warfare operational training and basic parachute training are the responsibility of Mobile Command. Basic fixed-wing and helicopter pilot training are a Training Command responsibility.

THE CANADIAN FORCES COMMUNICATIONS SYSTEM (CFCS)

The role of the CFCS is to provide fixed communications networks for the forces and to provide a national communications system for survival operations (civil defence). To carry out this role, CFCS commands all fixed communications installations within Canada.

THE RESERVE AND SURVIVAL ORGANIZATION

The command and administration of the Reserves and Cadets is the responsibility of the Deputy Chief of Reserves (Major-General) at CFHQ. The Naval Reserve reports to the Deputy Chief of Reserves through the Commander, Naval Reserve. The Militia and Cadets are commanded and administered through five Region Headquarters and seven District Headquarters that are organized on a geographical basis. The Air Reserve reports through the Commander, Mobile Command.

The role of the organization is to provide reserve forces-in-being to support the regular forces under their functional commanders; a training force to support the regular forces; aid to the civil power; emergency forces for civil emergency operations—peace and war; and provincial representation.

Administration of Military Bases in Canada

Staffs and services required below command headquarters level to administer and support units based in a particular locality have been organized on Canadian Forces bases. The primary role of each base is to provide base-level administration and supporting services to those units located on or near the base. Each base has been allocated to a functional commander, to whom the base commander reports. The base commander is provided with sufficient staff, with representation from the four functional branches, to command and administer the base.

Section 3.—Operations

Naval Forces

The Fleet.—As of December 1968, there were 30 ships in commission and nine in reserve. HMCS *Okanagan*, the third Oberon class submarine, joined the fleet in September and HMCS *Rainbow*, a Tench class submarine, in December. Trials with the hydrofoil *Beas d'Or* commenced in August and are scheduled to be completed in June 1969. Construction of the research vessel *Quest* was expected to be completed in May 1969 and construction of two operational support ships was progressing—*Protecteur* being scheduled for completion in June 1969 and *Preserveur* in November. Construction started on the first two of the four DDH 280s which are to be completed in 1971 and 1972. The *Terra Nova* was undergoing trials which will be completed in August 1969. The next ship conversion will commence in 1969 and the last two in 1970.

Operations in 1968.—The Navy participated in two major NATO exercises carried out in the North Atlantic. As well, units of the Navy were involved in combined Canadian-United States anti-submarine exercises adjacent to both East and West Coasts. In addition to these combined exercises, operational team training was carried out with ships, submarines and aircraft from Maritime Command in the waters off Bermuda. During the period from January to March, training exercises for all units were conducted off Puerto Rico in order to bring individual units up to an operational status. The Navy also supported two Mobile Command exercises held on the East Coast. In addition to operations and training, the Navy carried out goodwill visits to the United States, Britain, the Netherlands, Ireland, Denmark, Sweden, Japan, Mexico and some of the islands in the Pacific.

Land Forces

Operations in 1968.—In fulfilment of military obligations under the North Atlantic Treaty, Canada continued to provide ground forces for the defence of Western Europe. The 4th Canadian Mechanized Brigade Group, the major units of which were the Lord Strathcona's Horse (Royal Canadians), the 1st Regiment Royal Canadian Horse Artillery, No. 1 Surface-to-Surface Missile Battery, 2nd Battalion The Royal Canadian Regiment, 2nd Battalion Princess Patricia's Canadian Light Infantry, and 1st Battalion Royal 22^e Régiment, constituted the Land Forces contribution in NATO in the Federal Republic of Germany. The Headquarters of the Brigade is at Soest and the married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn. Canada also provides two infantry battalions to the Allied Command Europe Mobile Force (Land Component). They are stationed in Canada but held in readiness for employment should the Mobile Force be activated.

The Canadian Forces continued to provide forces in support of United Nations operations as follows: (1) a force of 587 officers and men formed part of the UN Force in Cyprus; the Canadian contribution consisted of an infantry battalion on reduced establishment, a Canadian Contingent Headquarters and a Canadian element for the UN Headquarters; (2) some 40 officers and men were employed in UN missions in Palestine, Kashmir and Korea; and (3) a specially trained and equipped force, equivalent to an infantry battalion group, was maintained in Canada to provide a force for service in support of the UN in any part of the world on short notice.

In addition to its UN commitments, the Canadian Forces, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet-Nam, Cambodia and Laos, continued to provide approximately 30 officers and men for truce supervisory duties in Indo-China. Two Land Force officers served on the International Observer Group in Nigeria. The Observer Group was invited by the Federal Government of Nigeria to observe the conduct of the federal armed forces involved in the internal conflict in that country.

Canadian Forces training teams are maintained in Ghana and Tanzania to assist in the training of the armed forces of those countries. A number of officers and other ranks from Ghana, Tanzania, Jamaica, Kenya, Nigeria (medical training only) and Zambia have received training in Canadian Forces schools.

Air Forces

Operations in 1968.—The Canadian Forces contribution to the air defence of North America during the year consisted of three CF-101B interceptor squadrons, two *Bomarc* surface-to-air missile squadrons and 27 radar sites. These forces, together with the Distant Early Warning Line (DEW), operated under the operational control of North American Air Defence Command (NORAD). No. 1 Air Division, Canada's NATO air contribution in Europe, operated with six squadrons of CF-104 aircraft. Four of these squadrons were employed in the strike/attack role and the other two were employed in the photo-reconnaissance role. Mobile Command's first CF-5 squadron was formed in 1968, operating initially with T-33 aircraft until receiving their first CF-5D late in the year.

Four land-based maritime squadrons were contributed to the Maritime Defence of North America; three of these based on the East Coast and one based on the West Coast are equipped with *Argus* aircraft, the largest and most modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was conducted throughout the year. The East and West Coast squadrons participated in a number of national, international and NATO anti-submarine exercises, and maintained daily patrols and surveillance of ocean areas adjacent to the Canadian coastlines.

Air Transport Command (ATC) continued to provide support to the Air Division and to the Army Brigade in Europe, using long-range *Yukon* and *Hercules* aircraft. A *Caribou* was maintained in India/Pakistan in support of UN MOGIP. In Canada, ATC airlifted Department of National Defence personnel and cargo from coast-to-coast and into the Arctic regions. *Hercules* aircraft were employed for paratroop training of the land forces, and T-33 aircraft carried out routine photographic missions for the Department. Search and rescue services were provided in the Canadian areas of responsibility. Throughout the year the Canadian Forces processed some 2,500 separate search and rescue incidents and flew more than 6,400 hours on this task.

Section 4.—Training

Recruit, basic trades training and most of advanced trades training in support of the Canadian Armed Forces takes place at schools under the supervision of Training Command. During 1968, 43,946 officers and men attended 1,905 serials of 597 different types of courses.

Combat Arms School, CFB Borden, Ont., conducts training for armoured and infantry of the Regular and Reserve forces from basic trades courses to advanced officer-level courses. Similar training for artillerymen and field engineers is conducted at CFB Shilo, Man., and CFB Chilliwack, B.C., respectively.

Recruit training takes place at CFB Cornwallis, N.S., for English-speaking personnel and CFB St. Jean, Que. for French-speaking personnel. The latter base also is the site of language training for French-speaking and English-speaking members of the Forces.

Support trades training is conducted at the School of Administration and Logistics, CFB Borden, and technical trades training is held at a number of locations throughout Canada. During 1969, technical training in the French language will begin at CFB St. Jean.

Flying training is generally based in the Prairie Provinces. During 1968, 360 pilots and radio navigators were granted "wing standard" and went on to further training in support of tactical air, air defence and long-range air transport operations.

Two Fleet schools, one at CFB Esquimalt, B.C., and the other at CFB Halifax, N.S., provide basic maritime trades training as well as training facilities for the operational warships on the West and East Coasts.

Canadian Military Colleges

The three Canadian Military Colleges are the Royal Military College of Canada, founded at Kingston, Ont., in 1876, Royal Roads, established in 1941 near Victoria, B.C., and Collège militaire royal de Saint-Jean, established at St. Jean, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948 and Collège militaire royal de Saint-Jean was opened in 1952. In 1959, the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees. In 1967 the Canadian Services Colleges were redesignated as the Canadian Military Colleges in keeping with unification of the Canadian Forces.

The role of the Colleges is to educate and train officer cadets for careers as commissioned officers in the Canadian Forces. Courses of instruction are designed to develop character and to provide a balanced liberal, scientific and military education leading to degrees in arts, commerce, science and engineering. The Royal Military College of Canada accepts senior matriculants and offers a four-year course. Royal Roads Military College accepts senior matriculants who, on successful completion of the second year, go to the Royal Military College of Canada for their third and fourth years. Collège militaire royal de Saint-Jean accepts junior matriculants who, after successfully completing the first three years, also proceed to the Royal Military College of Canada for their last two years.

To be eligible for admission to a College, candidates must be single, Canadian citizens and physically fit. Candidates must have reached their 16th but not their 21st birthday on the first day of January preceding entrance, with the exception of junior matriculation candidates for Collège militaire royal de Saint-Jean who must have reached their 16th but not their 20th birthday on the first day of January preceding entrance. On entry into one of the Colleges applicants are enrolled as Regular Force Officer Cadets in the Canadian Forces. Costs of tuition, uniforms, books, instruments and other fees are borne by the Department of National Defence. Officer Cadets receive a salary of \$187 a month and are charged \$86 a month for board and lodging. On successfully completing their academic and military training, officer cadets are granted permanent commissions in the Regular Force.

Most officer cadets entering the Military Colleges enrol under the Regular Officer Training Plan. Provision is made for the entry of a number of Dominion cadets. These are sons of persons who were killed, or died or are severely incapacitated as a result of service in a component of the Canadian Forces or the Canadian Merchant Marine during hostilities. Dominion cadets enter the Reserve Force and receive free tuition during the first academic year at a military college. A limited number of Reserve cadets who pay tuition and other fees during the duration of the course may also be admitted.

During the 1968-69 academic year, 1,152 officer cadets were enrolled at the Military Colleges: 556 of them at the Royal Military College, 219 at Royal Roads and 377 at Collège militaire royal de Saint-Jean.

Staff Training Colleges

The Canadian Land Forces Command and Staff College at Kingston, Ont., gives an 18-month course for the training of officers for staff appointments. Although most of the student body is composed of officers of the army element, officers from the other two elements and from the armies of other Commonwealth and NATO countries also attend. Instruction is based on the study of textbooks and reference material and involves lectures, demonstrations, and indoor and outdoor exercises. In addition to military subjects, the curriculum includes research and development, world affairs and lectures by prominent guest speakers.

The Canadian Forces College at Armour Heights, Toronto, consists of three colleges for the staff training of officers:—

Staff College.—Officers of Major rank take a 44-week course to prepare themselves for assumption of higher rank in the Canadian Armed Forces. Training emphasizes the logical and precise expression of ideas, staff and administrative procedures, scientific and technical developments and national and international current affairs. The syllabus is enhanced by a variety of expert military and civilian guest lecturers and by visits to Canadian and United States military and civilian establishments.

Staff School.—Officers of Captain and Lieutenant rank take a 14-week course to prepare themselves to assume junior staff and administrative positions in the Canadian Armed Forces. Training emphasizes military administrative procedures, the conduct of correspondence and civil and military organization. Students also study national and international current affairs.

Extension School.—Selected military and academic courses of study by correspondence are offered to all officers of the Canadian Armed Forces.

The National Defence College at Kingston, the senior defence college, provides an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and public servants from the Armed Forces and Federal Government departments attend, as well as representatives from industry. Lecturers are chosen from among the leaders in various fields in Canada and other countries. In addition, tours and visits to certain parts of Canada, the United States, Europe, Asia, Africa, Australia and Latin America familiarize students with conditions and influences in their own country and in other countries.

Section 5.—Reserves and Cadets

Reserves

The Naval Reserve.—Recruiting and training of officers and men of the Naval Reserve is conducted mainly through 16 Naval Reserve Units across Canada under the Commander, Naval Reserve, who is also the Director General Operations Maritime, located at Canadian Forces Headquarters, Ottawa. Naval Reserve Units are established at the following centres:—

St. John's, Nfld., HMCS *Cabot*
 Halifax, N.S., HMCS *Scotian*
 Saint John, N.B., HMCS *Brunswick*
 Quebec, Que., HMCS *Montcalm*
 Montreal, Que., HMCS *Donnacona*
 Toronto, Ont., HMCS *York*
 Ottawa, Ont., HMCS *Carleton*
 Kingston, Ont., HMCS *Cataraqui*

Hamilton, Ont., HMCS *Star*
 Windsor, Ont., HMCS *Hunter*
 Port Arthur, Ont., HMCS *Griffon*
 Winnipeg, Man., HMCS *Chippawa*
 Saskatoon, Sask., HMCS *Unicorn*
 Calgary, Alta., HMCS *Tecumseh*
 Vancouver, B.C., HMCS *Discovery*
 Esquimalt, B.C., HMCS *Malahat*

Naval Reserve Units, commanded by reserve officers, provide both basic and specialized training for officers and men of the Naval Reserve. Additional training is also conducted in Regular Force schools across the country and in HMC Ships.

The Militia.—Based largely upon the recommendations of the Ministerial Commission on the Reorganization of the Canadian Army Militia, many changes in its composition were implemented during the period November 1964 to March 1965. Subsequent to that time the roles, training standards and methods and emergency plans have also been revised. The Militia is now composed of 112 major units with an establishment of 300 or over and 53 minor units; the total establishment is 39,978.

Planning for the employment of the Militia in the event of an emergency is based on:
 (1) the Ready Reserve, individuals assigned to specified Regular Force positions;
 (2) the Canadian Regional Reserve, composed of individuals and units for the defence

of Canada, internal security and the Civil Emergency Operations Organization; and (3) the Mobile Command Reserve, comprising sub-units that will be required to reinforce or expand the field force. Personnel for the three categories are trained under the direction of Region and Unit Commanders during the winter months. This includes training of a general military nature and, in addition, that required for trades, specialties and rank progression. Further instruction of this nature is received during the summer at Regional Rank and Trades Schools. Also, a large number of courses are conducted at Regular Force Schools throughout the year. In addition, those personnel nominated as Ready Reservists are eligible to receive in-job training each year in the actual position in which they will be employed in an emergency. Similarly, the Mobile Command Reserve sub-units are trained at a special concentration each year and the Regional Reserve are trained collectively under Regional arrangements.

Air Reserve.—The active sub-components of the Primary Reserve of the Air Element are designated the Air Reserve, which is made up of six Reserve Flying Squadrons and four Reserve Support Squadrons. Montreal and Toronto each has two Flying Squadrons and one Reserve Support Squadron; Winnipeg and Edmonton each has a single Flying Squadron with a Reserve Support Squadron. The Reserve Support Squadrons are required to provide the necessary administrative support to the Flying Squadron to include all phases from recruiting to release procedures, except for operational control and flying training. All Air Reserve Squadrons are directly responsible to one of the two Tactical Air Wings situated at Petawawa, Ont., and Calgary, Alta., which in turn are responsible through 10 Tactical Air Group to the Commander of Mobile Command. All Flying Squadrons are equipped with the DHC-3 *Otter*. Their role is light tactical air transport support and reconnaissance for ground forces. They can be tasked as: (1) tactical air transport, including logistics support, air evacuation of casualties, communications and liaison; (2) airborne surveillance in support of ground forces in a permissive air environment; (3) aerial photography to provide the ground forces with a limited photographic capability that will supplement the reconnaissance provided by specialized tactical reconnaissance aircraft; (4) aerial, visual, photographic reconnaissance and radiation monitoring for civil emergency operations; (5) provision of a reserve of trained pilots who could be incorporated into the Mobile Command Flying Units if required.

Canadian Armed Forces Cadets

The object of the cadet movement in Canada is to provide the opportunity for young men, aged 13 to 18, to acquire the fundamentals of good citizenship and leadership. This is achieved by a combination of training at the local cadet units and at summer camps. In keeping with the unified concept of the Canadian Armed Forces, the Sea, Army and Air Cadet organizations have integrated the command and control functions of their respective organizations and adopted a common aim: "To develop in youth the attributes of good citizenship and leadership; to promote physical fitness; and to stimulate their interest in the Sea, Land and Air elements of the Canadian Forces". While cadet officers remain environmental, they are commissioned in the Cadet Instructor List which is a sub-component of the Canadian Forces Reserves.

Royal Canadian Sea Cadets.—Royal Canadian Sea Cadets, sponsored by the Navy League of Canada in partnership with the Canadian Forces, comprise 185 corps. These corps are supervised jointly by the local branches of the League and by naval officers in each of Canada's five military regions. Instruction at corps level is carried out by Cadet Instructor List Officers (Sea). Two training establishments, Cornwallis on the East Coast and Quadra on the West Coast, accommodate officers and cadets for two-week training periods in the summer. In addition, selected cadets receive a six-week training course at Canadian Forces bases. Sea experience is provided throughout the year in HMC Ships. As of Sept. 30, 1968, the strength of the corps was 1,031 officers and 11,352 cadets.

Royal Canadian Army Cadets.—Supervision of the organization and training of Army Cadets is carried out by the region and district Regular Force staff. The training and administration is the responsibility of officers of the Cadet Instructor List (Army), a sub-component of the Reserves and civilian instructors. As of Sept. 30, 1968, officers and civilian instructors numbered 2,264, and there were 52,806 cadets enrolled in 457 corps.

The International Exchange Visits Program provided Army Cadets the opportunity to visit and train abroad; 75 cadets to Jamaica, Barbados, Trinidad and Tobago, and Grenada; 16 cadets to the National Rifle Association matches at Bisley, England, and one officer and six cadets to the Outward Bound Course at Towyn, Wales. Cadets from the Caribbean countries trained at Aldershot, N.S., Valcartier, Que., and Ipperwash Beach, Ont. One officer and six cadets from Britain trained at the National Army Cadet Camp at Banff, Alta., and 14 British cadets participated in the Dominion of Canada Rifle Association matches at the Connaught Ranges near Ottawa.

In 1968, 3,852 cadets attended six-week trades and specialist courses at CFB Halifax, CFB Cornwallis and Camp Aldershot in Nova Scotia, CFB Valcartier in Quebec, CFB Borden, CFB London and Ipperwash Beach in Ontario, CFB Shilo in Manitoba, CFB Calgary in Alberta and CFB Esquimalt and Vernon in British Columbia; 3,413 cadets attended two-week cadet leader and special camps at Aldershot in Nova Scotia, CFB Valcartier and Montreal in Quebec, Ipperwash Beach, Sandstone Lake and Fairbanks Lake in Ontario, CFB Shilo in Manitoba, and Vernon and Albert Head in British Columbia; 220 master cadets attended the National Army Cadet Camp at Banff in Alberta for six weeks of training which included mountain marches, rock-climbing and survival.

Royal Canadian Air Cadets.—The Air Cadet movement operates on the basis of a partnership between the Air Cadet League of Canada, a voluntary civilian organization, and the Canadian Armed Forces. The League sponsors and administers Air Cadet activities while the Canadian Armed Forces provide training personnel, syllabi and equipment and also assist the League in organization and administration. The objectives of training are to encourage air cadets to develop the attributes of good citizenship, to stimulate in them an interest in aviation and space technology, and to help them develop a high standard of physical fitness, mental alertness and discipline. The authorized ceiling of cadet enrolment is 29,000; the strength at Oct. 1, 1968, was 28,518 cadets attached to 370 squadrons across Canada.

During the summer of 1968, camps were conducted at CFB Greenwood, N.S., St. Jean, Que., Trenton, Ont., and Penhold, Alta., attended by 6,480 cadets and 875 officers and instructors. A six-week senior leaders' course for 240 cadets and a six-week technical training course for 100 cadets were held at CFB Borden, Ont. A bush familiarization course, teaching the techniques of survival and ground search, was conducted at Namao, Alta., for 54 cadets. Under the International Exchange Visits Program for 1968, 62 air cadets were exchanged with Austria, Belgium, Britain, France, Israel, the Netherlands, Norway, Spain, Sweden, Switzerland, the United States and the Federal Republic of Germany.

About 225 senior air cadets receive flying training annually at flying clubs through Canadian Armed Forces sponsored scholarships; 98 additional scholarships were awarded by the Air Cadet League and other organizations in 1968.

Section 6.—The Defence Research Board

The Defence Research Board is the agency in the Department of National Defence responsible for scientific research. It was created in 1947 by an amendment to the National Defence Act. It provides, through the Chairman, scientific advice to the Minister of National Defence and scientific and technical assistance to the Canadian Armed Forces.

The Board consists of a full-time chairman and vice-chairman, five ex officio members and a varying number of members selected from universities and industry appointed by the Governor in Council. The ex officio members are the Deputy Minister of National Defence, the President of the National Research Council, the Chief of Defence Staff, the Vice Chief of Defence Staff and the Chief of Technical Services. The Chairman is the chief executive officer of the Board's research organization. He is a member of the Defence Council, which is the senior policy body of the Department of National Defence. The Vice-Chairman is an associate member.

The research organization consists of seven research establishments in which an intramural program of research specifically oriented toward military needs is carried out. The Board also conducts an extramural research program through grants in aid of research to universities. These investigations are usually basic in nature and seek to provide new knowledge in fields from which important military developments are likely to arise. Support is also provided to industry with the object of promoting and strengthening the research capability of Canada's defence industry. This is a program of applied research of defence interest. It is financed on a cost-sharing basis with industry with each (government and industry) providing 50 p.c. of the funds.

The Defence Research Board is active in international collaboration in defence science throughout the western world. A very active quadripartite organization with Britain, Australia and the United States has built up to ensure full utilization of defence scientific knowledge, resources and facilities of these countries. In addition, bilateral agreements with several NATO nations serve to enhance the interchange of defence scientific and technical knowledge in areas of mutual interest. The Board represents Canada on a number of specialist committees through which NATO's scientific endeavours are processed and co-ordinated. The Board also provides representation on the Commonwealth Defence Science Organization which fosters and promotes scientific exchange between the countries of the Commonwealth. It maintains liaison offices in Washington, London and Paris.

Research on maritime warfare problems, particularly those relating to submarine detection and tracking, is carried out at the Defence Research Establishment Atlantic and at the Defence Research Establishment Pacific. Research and development of weapons and defence against various weapons is undertaken in co-operation with the Armed Forces at several establishments, the largest of which is the Canadian Armament Research and Development Establishment. Its principal activities include studies of defence against missiles, studies of the properties and application of infrared and other detection devices, the development of rocket propellants, explosives and armament.

Defence communication studies are carried out by the Communications Research Centre (Department of Communications) on behalf of the Defence Research Board. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at two Defence Research establishments—the Defence Research Establishment Ottawa, and the Defence Research Establishment Suffield at Ralston, Alta. The Defence Research Establishment Toronto is concerned with biosciences research, chiefly with raising the operating efficiency of men working in the military environment, including such subjects as human physiology, experimental psychology and research on clothing. The Defence Research Analysis Establishment provides scientific evaluation and analysis of present and future weapons systems, tactical doctrine and other aspects of military operations, and studies broad strategic problems.

Thus, the Board continues to support the fields of research which are of foremost interest to the Canadian Armed Forces and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and other appropriate Departments to ensure that research and development activities are closely integrated with production.

PART II.—CIVIL EMERGENCY PLANNING (CANADA EMO)

The Emergency Measures Organization was established within the Privy Council Office by authority of a Cabinet directive on June 1, 1957 to develop an organization for the provision of government leadership, services and resource management in an emergency, as well as to provide a Canadian response to NATO civil emergency planning. On May 28, 1959, the Government placed the Emergency Measures Organization under the Prime Minister and defined the civil defence responsibilities of the National Defence, National Health and Welfare and Justice Departments. Under this Order, the Emergency Measures Organization assumed, in addition to its government and resource management planning, the responsibilities of the Civil Defence Branch which, in turn, ceased to exist. On June 27, 1963 (Order in Council PC 1963-993) the Emergency Measures Organization was transferred to the Minister of Defence Production and in 1965 (PC 1965-1041) the Civil Emergency Measures Planning Order was approved, which, in addition to defining the responsibilities of various departments, placed the organization under the Minister of Industry. The 1965 Order in Council was amended in 1968 (PC 1968-1302 and 1968-1508) transferring responsibility for civil emergency planning to the Minister of National Defence.

Under the Minister of National Defence, the Canada Emergency Measures Organization is the federal co-ordinating agency for all civil emergency planning. Its functions are to:—

- (1) develop policies and a program to ensure the continuity of government in an emergency;
- (2) co-ordinate civil emergency planning and training by departments, agencies and Crown corporations of the Government of Canada;
- (3) in conjunction with provincial authorities, develop policies and a program for the control of civil road transport resources in an emergency;
- (4) plan civil emergency measures in respect of matters that are not the responsibility of any department, agency or Crown corporation of the Government of Canada, or recommend to the Governor in Council the assignment of such responsibility to a minister;
- (5) provide assistance and guidance to provincial governments and municipalities in respect to the preparation of civil emergency measures in matters that are not the responsibility of any department, agency or Crown corporation of the Government of Canada;
- (6) with the concurrence of the Secretary of State for External Affairs, provide general liaison with other countries and with the North Atlantic Treaty Organization on matters relating to civil emergency measures; and
- (7) be responsible for the direction and administration of the Canadian Emergency Measures College at Arnprior, Ont.

The Civil Emergency Measures Planning Order also defines the civil emergency powers, duties and functions of the ministers of federal departments and agencies having immediate responsibilities in the event of a war emergency. Included in this category are the Departments of Agriculture, Communications, External Affairs, Finance, Forestry and Fisheries, Justice, Labour, Manpower and Immigration, National Defence, National Health and Welfare, Public Works, Solicitor General and Transport, and the Bank of Canada, the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation and the Royal Canadian Mounted Police.

Organization

The general federal organization for civil emergency planning may be summarized as:—

- (1) a Cabinet Committee on External Policy and Defence;
- (2) the Canada Emergency Measures Organization, comprising the Director General and headquarters staff, the Regional Directors in each province, and the Canadian Emergency Measures College;
- (3) Federal Government departmental planning staffs; and
- (4) Federal Government organizations in the provinces.

Headquarters Organization.—The headquarters of the Canada EMO is located in Ottawa. The Director General reports to government through the Minister of National Defence. A regional office is located in the capital city of each province and for planning purposes each region corresponds to its respective provincial boundaries. Planning responsibility for the Yukon Territory and the District of Mackenzie and Western Arctic Islands of the Northwest Territories is carried out from offices in Edmonton, Alta.

Canada EMO has been organized into three major functional branches, each under a director: National Civil Emergency Measures Program Branch; Long Range Planning and Development Branch; and National Training and Exercises Branch. Within the National Civil Emergency Measures Program Branch are divisions responsible for planning and budgeting, program evaluation, continuity of government planning, public fallout protection planning, emergency public information planning, and road transport planning. The Long Range Planning and Policy Development Branch is comprised of divisions responsible for economic planning, operational concepts and procedures, physical protection planning, radiological, biological and chemical defence planning, organization system planning and international civil emergency planning. The National Training and Exercise Branch is responsible for training development, national exercise planning and supervision of the Canadian Emergency Measures College.

Federal Regional Directors in Provinces.—Regional Directors of Canada Emergency Measures Organization in each province (region) have been assigned the following responsibilities:—

- (1) to represent Canada EMO in the region for all civil emergency planning purposes;
- (2) to establish and maintain effective liaison with all federal departments and agencies, including the Armed Forces, and to co-ordinate emergency planning activities;
- (3) to establish and maintain effective liaison with the provincial government in the region, to assist in the development of provincial emergency plans, including those of local organizations, and to assist in the Canada EMO review of requests for financial aid from the province or municipalities within the region.

Provincial Government Civil Emergency Responsibilities

Provincial governments will make such preparations as are required to enable them to execute the following civil emergency powers, duties and functions in war:—

- (1) the development of policies and a program to ensure the continuity of provincial government in an emergency—including (a) the selection of government departments and agencies with immediate responsibilities in the saving of lives and the continuing function of essential services and the development of plans by the departments selected covering their emergency operations, (b) plans for the relocation of government, (c) the designation of officials for duty in an emergency, (d) plans for the manning of Regional Emergency Government Headquarters, Emergency Government Relocation Units and Zone Emergency Government Headquarters, and (e) the selection and storage of essential records;
- (2) the preservation of law and order, including control of traffic;
- (3) the organization and control of emergency welfare services including emergency clothing, lodging, feeding, registration and enquiry and personal services;
- (4) the organization and control of health and medical services, including hospitals and public health measures;
- (5) maintenance and repair of roads and road bridges;
- (6) co-ordination of municipal and other services for the maintenance and repair of water and sewage systems;
- (7) organizations and operation of firefighting services;
- (8) maintenance and repair of electrical and gas utilities;
- (9) organization and operation of radiological defence services;
- (10) communications as required from REGHQ to provincial government agencies and municipalities;
- (11) co-ordination and, as may be required, direction of the emergency operations of municipal governments;

- (12) assistance to the Department of National Defence in the conduct of survival operations in damaged areas;
- (13) in accordance with agreements reached with the federal departments and agencies concerned, (a) control of accommodation, control of engineering and construction resources, provision of emergency housing and arrangements for roads and road bridges, (b) control of road transport resources, and (c) maintenance of agricultural production and control of fisheries;
- (14) such other emergency functions as may be subsequently agreed upon between the federal and provincial governments.

In addition, provincial governments in peacetime will be responsible for:—

- (1) assigning to each municipal government its operational roles;
 - (2) providing assistance and guidance to municipal governments in respect of the preparation of municipal civil emergency plans for the continued operations of municipal government, survival of the public and the operation of municipal emergency services, including the organization and operation of such special emergency services as may be required, such as rescue, warden, emergency communications, emergency public information, radiological defence and emergency transportation;
 - (3) assistance and guidance to municipal governments in the training and exercising of regular municipal employees and volunteers as emergency workers;
 - (4) making such preparations or arrangements as are required to provide for the protection of the population of those parts of the province that are not administered by an incorporated municipal government.
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CHAPTER XXVII.—OFFICIAL SOURCES OF INFORMATION AND MISCELLANEOUS DATA

CONSPECTUS

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PART I.— OFFICIAL SOURCES OF INFORMATION

Section 1.—Books About Canada

This basic list of books about Canada, contributed by the National Library, includes a selection of publications grouped alphabetically by author and arranged under the subject classifications of Biography, Country and People, Economics, External Relations, Government and Politics, History, Literature and the Arts, and General Reference Works. The selection represents many aspects of Canadian life, emphasizes the latest editions of books published within the past five years, and includes titles issued in either or both English and French, accompanied by the publisher's address.

It should be noted that, although this list is now an annual feature of the Year Book, it is not a cumulative presentation; it is limited to about 480 titles, necessitating the omission of some items that appeared the preceding year to permit the inclusion of others. For additional titles, the reader should consult the lists of books in earlier Year Books or one or more of the bibliographical collections listed below under the heading "General Reference Works", particularly the monthly or annual editions of *Canadiana* published by the National Library.

Biography

- BARRETTE, Antonio. *Mémoires*. T. 1. Montréal, Beauchemin, 1966. 448 p.
- BARRETTE, Antonio. *Memoirs*. Translated by Marc SORMONT. Montreal, Beauchemin, 1966. 354 p.
- BEAL, J. R. *The Pearson phenomenon*. Toronto, Longmans, 1964. 210 p.
- BEAL, J. R., et POLIQUIN, J.-M. *Les trois vies de Pearson*. Montréal, Éditions de l'Homme, 1968. 269 p.
- BÉCHARD, Henri. *L'héroïne indienne Kateri Tekakwitha*. Montréal, Fides, 1967. 200 p.
- BERGERON, Gérard. *Ne bougez plus! Portraits de 40 politiciens de Québec et d'Ottawa*. Montréal, Éditions du Jour, 1968. 223 p.
- Biographies canadiennes-françaises*. 20^e éd. Montréal, 1965. 1347 p.
- BOND, C. C. J. *Surveyors of Canada, 1867-1967*. Ottawa, Canadian Institute of Surveying, 1966. 154 p.
- CANADA. Department of Public Printing and Stationery. *The founders and the guardians; Fathers of Confederation, Governors-General, Prime Ministers*. Ottawa, Queen's Printer, 1968. 147 p.

- CANADA. Département des impressions et de la papeterie publiques. *Fondateurs et gardiens; Pères de la Confédération, Gouverneurs généraux, Premiers ministres.* Ottawa, Imprimeur de la Reine, 1968. 147 p.
- Canadian writers. *Écrivains canadiens.* A biographical dictionary edited by—un dictionnaire biographique rédigé par Guy SYLVESTRE, Brandon CONRON, C. F. KLINCK. New ed. rev. and enl. Nouv. éd. rev. et augm. Toronto, Ryerson Press, 1966. 186 p. (Articles by French language authors are in French.)
- CARR, Emily. *Hundreds and thousands; the journals of Emily Carr.* Toronto, Clarke, Irwin, 1966. 332 p.
- COPLAND, Alfred. *Livingstone of the Arctic, by Dudley Copland.* Ottawa, 1967. 183 p.
- DANDURAND, Raoul. *Les mémoires du sénateur Raoul Dandurand, 1861-1942.* Édités par Marcel HAMELIN. Québec, Presses de l'Université Laval, 1967. 374 p.
- DAVIES, Blodwen. *Tom Thomson; the story of a man who looked for beauty and for truth in the wilderness.* Rev. memorial ed. Vancouver, Mitchell Press, 1967. 102 p.
- DESROSIER, L. P. *Paul de Chomedey, sieur de Maisonneuve.* Montréal, Fides, 1967. 322 p.
- Dictionary of Canadian biography.* General editor, G. W. BROWN. Directeur adjoint, Marcel TRUDEL. Vol. 1. 1000 to 1700. Toronto, University of Toronto Press, 1965. (To be complete in 24 v.)
- Dictionnaire biographique du Canada.* General editor, G. W. BROWN. Directeur adjoint, Marcel TRUDEL. t. 1. 1000 à 1700. Québec, Presses de l'Université Laval, 1966. (L'ouvrage entier doit comprendre 24 v.)
- DRURY, E. C. *Farmer premier; memoirs of the Honourable E. C. Drury.* Toronto, McClelland and Stewart, 1966. 198 p.
- DYONNET, Edmond. *Mémoires d'un artiste canadien.* Préf. de Jean MÉNARD. Ottawa, Éditions de l'Université d'Ottawa, 1968. 144 p. (Cahiers du Centre de recherches en littérature canadienne-française)
- EGGLESTON, Wilfrid. *While I still remember; a personal record.* Toronto, Ryerson Press, 1968. 329 p.
- FALMAGNE, Thérèse. *Un marquis du grand siècle, Jacques-René de Brisay de Denonville, gouverneur de la Nouvelle-France 1637-1710.* Montréal, Éditions Leméac, 1965. 341 p.
- FERGUSON, Max. *And now here's Max.* New York, Toronto, McGraw-Hill, 1967. 167 p.
- FRÉGAULT, Guy. *Pierre LeMoigne d'Iberville.* Montréal, Fides, 1968. 300 p.
- FRENCH, Maida P. *Kathleen Parlow; a portrait.* Toronto, Ryerson Press, 1967. 167 p.
- GILBERT, Heather M. *Awakening continent; the life of Lord Mount Stephen.* Vol. I. 1829-91. Aberdeen, Aberdeen University Press, 1965. 314 p. (Vol. 2 will not be completed until the private papers of J. J. Hill are made available in 1981.)
- GRENON, Hector. *Chroniques vécues; des modestes origines d'une élite urbaine.* Montréal, Éditions de l'Homme, 1966. 494 p.
- GWYN, R. J. *Smallwood: the unlikely revolutionary.* Toronto, McClelland and Stewart, 1968. 304 p.
- HAMBLETON, Ronald. *Mazo de la Roche of Jalna.* Toronto, General Pub. Co., 1966. 239 p.
- HARVISON, C. W. *The Horsemen.* Toronto, McClelland and Stewart, 1967. 271 p.
- INNIS, Mary Quayle, ed. *The clear spirit; twenty Canadian women and their times.* Toronto, University of Toronto Press, 1966. 304 p. (Includes two chapters in French)
- JACKSON, A. Y. *A painter's country; the autobiography of A. Y. Jackson.* Centennial ed. Toronto, Clarke, Irwin, 1967. 177 p. (Reprinted with an additional chapter 1967)
- KAVANAGH, Martin. *La Vérendrye, his life and times; a biography and a social study of a folklore figure: soldier, fur trader, explorer.* Brandon, 1967. 262 p.
- KIRKCONNELL, Watson. *A slice of Canada; memoirs.* Toronto, Published for Acadia University by University of Toronto Press, 1967. 393 p.
- LAPIERRE, J. E. *Calixa Lavallée, musicien national du Canada.* Montréal, Fides; Publications de la Société historique de Montréal, 1966. 291 p.
- LA ROQUE DE ROQUEBRUNE, Robert. *Cherchant mes souvenirs, 1911-1940.* Montréal, Fides, 1968. 243 p. (Collection du Nénuphar. 31) (Suite de Testament de mon enfance et de Quartier Saint-Louis publiés dans la même collection.)
- LAVERGNE, Armand. *Armand Lavergne.* Textes choisis et présentés par Marc LA TERREUR. Montréal, Fides, 1968. 95 p. (Collection Classiques canadiens, 31)
- LOWER, A.R.M. *My first seventy-five years.* Toronto, Macmillan, 1967. 384 p.
- LUCHKOVICH, Michael. *A Ukrainian Canadian in Parliament; memoirs of Michael Luchkovich.* Toronto, Ukrainian Canadian Research Foundation, 1965. 128 p. (Ukrainian Canadian Research Foundation. The Canadian centennial series, 2)
- MACGREGOR, J. G. *Peter Fidler: Canada's forgotten surveyor, 1769-1822.* Toronto, McClelland and Stewart, 1966. 265 p.

- MÉNARD, Jean. *Variet Marmier et le Canada, avec des documents inédits; relations franco-canadiennes au XIX^e siècle*. Québec, Presses de l'Université Laval, 1967. 210 p. (Vie des lettres canadiennes, 4)
- MITCHELL, Estelle. *Messire Pierre Boucher (écuyer), seigneur de Boucherville, 1622-1717*. Montréal, Beauchemin, 1967. 389 p.
- MORIN, Renée. *Un bourgeois d'une époque révolue: Victor Morin, notaire, 1865-1960*. Montréal, Éditions du Jour, 1968. 159 p. (Les idées du jour, D-34)
- MORGES, Audrey Y. *Gentle pioneers; five nineteenth-century Canadians*. Toronto, London, Hodder and Stoughton, 1968. 253 p. (Strickland family)
- NULIGAK, I. *Nuligak*. Translated from the Eskimo by Maurice METAVER. Illus. by EKOOTAK. Toronto, P. Martin Associates, 1966. 208 p.
- OSLER, E. B. *La Salle*. Don Mills, Ont., Longmans, 1967. 266 p.
- PEAKE, F. A. *The bishop who ate his boots; a biography of Isaac O. Stringer*. Toronto, Anglican Church of Canada, 1966. 190 p.
- PEPPER, Kathleen D. *James Wilson Morrice*. Toronto, Clarke, Irwin, 1966. 101 p.
- POWER, C. G. *A party politician; the memoirs of Chubby Power*. Ed. by Norman WARD. Toronto, Macmillan, 1966. 419 p.
- RILEY, Very Rev. C. E. *Derwyn Trevor Owen, Primate of All Canada*. Toronto, Ryerson Press, 1966. 175 p.
- SCHULL, J. J. *Laurier; the first Canadian*. Toronto, Macmillan, 1965. 658 p.
- SCHULL, J. J. *Laurier*, traduit par Hélène J. GAGNON. Montréal, HMH, 1968. 540 p.
- SHERMAN, Patrick. *Bennett by Paddy Sherman*. Toronto, McClelland and Stewart, 1966. 316 p.
- SISSONS, J. H. *Judge of the far North; the memoirs of Jack Sissons*. Toronto, McClelland and Stewart, 1968. 190 p.
- SKELTON, O. D. *Life and times of Sir Alexander Tilloch Galt*. Ed. and with an introd. by Guy MACLEAN. Toronto, McClelland and Stewart, 1966. 293 p. (The Carleton library, no. 26)
- STALEY, T. P. *The assassination of D'Arcy McGee*. Toronto, Doubleday Canada; New York, Doubleday, 1968. 527 p.
- SLUMAN, Norma. *Poundmaker*. Toronto, Ryerson Press, 1967. 301 p.
- SPENCE, R. St. G. *Four recorders of Rupert's Land; a brief survey of the Hudson's Bay Company courts of Rupert's Land*. Winnipeg, Peguis Publishers, 1967. 192 p.
- SWETTENHAM, John. *McNaughton*. v. 1. 1887-1939. Toronto, Ryerson Press, 1968. 370 p.
- TERRILL, J. U. *La Salle; the life and times of an explorer*. Toronto, Clarke, Irwin; N. Y., Weybright & Talley, 1968. 282 p.
- THOMSON, D. C. *Louis St. Laurent: Canadian*. Toronto, Macmillan, 1967. 564 p.
- WILGESS, W. S., ed. *The Macmillan dictionary of Canadian biography*. 3d ed. Toronto, Macmillan, 1963. 822 p.
- Who's who in Canadian Jewry, 1965*. Compiled by the Canadian Jewish Literary Foundation. Montreal, Jewish Institute of Higher Research, Central Rabbinical Seminary of Canada, 1965. 525 p.
- WILGESS, D. L. *Memoirs*. Toronto, Ryerson Press, 1967. 190 p.

Country and People

- ABRAHAMSON, Una. *God bless our home; domestic life in nineteenth century Canada*. Toronto, Burns and MacEachern, 1966. 233 p.
- ALVAY, Howard. *The education of Canadians, 1800-1867; the roots of separatism*. Montreal, Harvest House, 1968. 145 p.
- ASSOCIATION CANADIENNE DES ÉDUCATEURS DE LANGUE FRANÇAISE. *Esquisses du Canada français*. Montréal, Fides, 1967. 450 p.
- ASSOCIATION CANADIENNE DES ÉDUCATEURS DE LANGUE FRANÇAISE. *Facets of French Canada*. Montréal, Fides, 1968. 450 p.
- BOULANGER, L.-P. et GAUTHIER, Armand. *Le système scolaire du Québec; organisation et fonctionnement*. Montréal, Beauchemin, 1967. 235 p.
- BARRY, J. P. *Georgian Bay, the sixth Great Lake*. Toronto, Clarke, Irwin, 1968. 190 p.
- BEKIN, Simon. *Through narrow gates; a review of Jewish immigration, colonization and immigrant and work in Canada (1840-1940)*. Montreal, Canadian Jewish Congress and the Jewish Colonization Association, 1966. 235 p.
- BENY, W. R. R. *To everything there is a season; Roloff Beny in Canada*. Essays, poems and journals ed. by Milton WILSON. Don Mills, Ont., Longmans, 1967. 324 p. 181 illus.
- BRUCE, Charles. *News and the Southams*. Toronto, Macmillan, 1968. 429 p.

- CANADA. Centennial Commission. *Canada 67; the best of Centennial pictures; l'année du centenaire en photos*. Text by Blair FRASER; texte de Jean-Marc POLIQUIN. Ottawa, Queen's Printer, 1968. 184 p.
- CANADA. Citizenship Branch. *The Canadian family tree*. Centennial ed. 1867-1967. Ottawa, Queen's Printer, 1967. 354 p.
- CANADA. Direction de la citoyenneté. *Les rameaux de la famille canadienne*. Éd. du Centenaire 1867-1967. Ottawa, Imprimeur de la Reine, 1967. 368 p.
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- t. 1. *Panorama des lettres canadiennes-françaises*, par Guy SYLVESTRE. 1964. 76 p.
 - t. 2. *Le théâtre au Canada français*, par Jean HAMELIN. 1964. 83 p.
 - t. 3. *La peinture moderne au Canada français*, par Guy VIAU. 1964. 93 p.
 - t. 4. *La vie musicale au Canada français*, par Annette LASALLE-LEDUC. 1964. 99 p.
 - t. 5. *La vie des sciences au Canada français*, par Cyrias OUELLET. 1964. 91 p.
 - t. 6. *L'essor des sciences sociales au Canada français*, par J.-C. FALARDEAU. 1964. 65 p.
 - t. 7. *La renaissance des métiers d'art au Canada français*, par Laurent et Suzanne LAMY. 1967. 84 p.
 - t. 8. *Vingt ans de cinéma au Canada français*, par Robert DAUDELIN. 1967. 69 p.
 - t. 9. *Arts et ornements et imagiers du Canada français*, par Gérard LAVALLÉE. 1968. 98 p.
- QUEBEC. Department of Cultural Affairs. *Series on the arts, humanities and sciences in French Canada*. Québec, 1967-
- v. 1. *Literature in French Canada*, by Guy SYLVESTRE. 1967. 80 p.
 - v. 2. *The theatre in French Canada, 1936-1966*, by Jean HAMELIN. 1968. 86 p.
 - v. 3. *Modern painting in French Canada*, by Guy VIAU. 1967. 93 p.
 - v. 6. *The rise of social sciences in French Canada*, by J.-C. FALARDEAU. 1967. 67 p.
- LAMY, Peter, comp. and ed. *The Stratford scene, 1958-1968*. Toronto, Clarke, Irwin, 1968. 256 p.
- MACDONALD, V. B., comp. *Canadian literature in English*. Montreal, Printed by Quality Press, 1965. 1055 p. (A bibliography)
- REIMOND, Giosè, and RUBERTO, ROBERTO, eds. *Modern Canadian stories*. Toronto, Ryerson Press, 1966. 402 p.
- ROBIDOUX, Régis, et RENAUD, André. *Le roman canadien-français du vingtième siècle*. Ottawa, Éditions de l'Université d'Ottawa, 1966. 221 p. (Visage des lettres canadiennes)
- SCAMMELL, A. R. *My Newfoundland; stories, poems, songs*. Montreal, Harvest House, 1966. 140 p.
- SCOTT, F. R., and SMITH, A. J. M., eds. *The blasted pine; an anthology of satire, invective and disrespectful verse chiefly by Canadian writers*. Rev. and enl. ed. Toronto, Macmillan, 1967. 166 p.
- SMITH, A. J. M., ed. *Modern Canadian verse*. Toronto, Oxford University Press, 1968. 496 p.
- SMITH, A. J. M. *The Oxford book of Canadian verse in English and French, 1960*. Toronto, Oxford University Press, 1965. 445 p. (An Oxford in Canada paperback, 1)
- SPENCE, Hilda, and SPENCE, Kevin. *A guide to early Canadian glass*. Don Mills, Ont., Longmans, 1966. 112 p.
- STEPHENS, Donald. *Bliss Carman*. New York, Twayne Publishers, 1966. 144 p. (Twayne's world authors series, 8)
- STEVENS, Gerald. *Canadian glass c. 1825-1925*. Toronto, Ryerson Press, 1967. 262 p.
- STORY, North. *The Oxford companion to Canadian history and literature*. Toronto, Oxford University Press, 1967. 835 p.
- THERIAULT, Adrien. *Conteurs canadiens-français; époque contemporaine*. Montréal, Librairie Déom, 1965. 322 p. (Anthologie formée de récits de vingt-trois auteurs)
- TOUGAS, Gérard. *Histoire de la littérature canadienne-française*. 4^e éd. Paris, Presses universitaires de France, 1967. 312 p.
- TOUGAS, Gérard. *History of French-Canadian literature*. Translation by Alta L. Cook. 2d ed. Toronto, Ryerson Press, 1966. 301 p.
- TWEDDIE, R. A., COGSWELL, Fred, and MACNUTT, W. S., eds. *Arts in New Brunswick*. Fredericton, Brunswick Press, 1967. 280 p.
- WARWICK, Jack. *The long journey; literary themes of French Canada*. Toronto, University of Toronto Press, 1968. 172 p. (University of Toronto romance series, 12)

- WEAVER, Robert, ed. *Canadian short stories: second series*. Toronto, Oxford University Press, 1968. 378 p.
- WHITTAKER, Herbert. *Canada's National Ballet*. Toronto, McClelland and Stewart, 1967. 105 p.
- WILSON, M. T., ed. *Poets between the wars: E. J. Pratt, F. R. Scott, A. J. M. Smith, Dorothy Livesay, A. M. Klein*. Toronto, McClelland and Stewart, 1967. 194 p. (New Canadian library original, no. 05. Poets of Canada, v. 2)
- WYCZYNSKI, Paul. *François-Xavier Garneau; aspects littéraires de son oeuvre*. Ottawa, Éditions de l'Université d'Ottawa, 1966. 207 p. (Visage des lettres canadiennes)

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- Un *Annuaire des sociologues et anthropologues au Canada et leur recherche courante*. A *Directory of sociologists and anthropologists in Canada and their current research*, by Desmond M. CONNOR. Montreal, Canadian Sociology and Anthropology Association, 1968. 92 p. (Text in French and English)
- The Atlantic year book*. Fredericton, N. B. Published for the Atlantic Advocate by Brunswick Press. Annual.
- BOULT, Reynald, comp. *Bibliographie du droit canadien*. Montréal, Wilson et Lafleur, 1966. 393 p.
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- CANADA. Bureau fédéral de la statistique. *Catalogue rétrospectif des publications du Bureau fédéral de la statistique, 1918-1960*. Ottawa, Imprimeur de la Reine, 1967. 298 p.
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- CANADA. Bureau fédéral de la statistique. *Annuaire du Canada*. Ottawa, Imprimeur de la Reine. Annuel.
- CANADA. Dominion Bureau of Statistics. *Canada: official handbook of present conditions and recent progress*. Ottawa, Queen's Printer. Annual.
- CANADA. Bureau fédéral de la statistique. *Canada: revue officielle de la situation actuelle et des progrès récents*. Ottawa, Imprimeur de la Reine. Annuel.
- CANADA. Dominion Bureau of Statistics. *Daily bulletin*. Ottawa, Queen's Printer.
- CANADA. Bureau fédéral de la statistique. *Le bulletin quotidien*. Ottawa, Imprimeur de la Reine.
- CANADA. Dominion Bureau of Statistics. *Canadian statistical review*. Ottawa, Queen's Printer. Monthly, with weekly and bilingual annual supplements.
- CANADA. Bureau fédéral de la statistique. *Revue statistique du Canada*. Ottawa, Imprimeur de la Reine. Mensuel avec suppléments hebdomadaires.
- CANADA. National Library. *Canadiana; publications of Canadian interest noted by the National Library*. Ottawa, Queen's Printer. Monthly, with annual cumulation.
- CANADA. Bibliothèque nationale. *Canadiana; publications se rapportant au Canada notées par la Bibliothèque nationale*. Ottawa, Imprimeur de la Reine. Mensuel, avec refonte annuelle.
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- CANADA. Youth Services Division. *Directory of Canadian youth organizations*. Ottawa, Queen's Printer, 1968. 209 p. (Text bilingual)
- Canada careers directory for university graduates*. Choisissez votre carrière, pour diplômés universitaires. Montreal, Cornmarket Press. Bilingual. Bilingue. Annual. Annuel.
- Canada legal directory, for the legal profession, containing the names of the judges, lawyers, court officials, etc., throughout Canada*. Toronto, Canada Legal Directory (125 Lowther Ave.). Annual.
- Canadian almanac and directory*. Toronto, Copp Clark. Annual.

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- The Canadian dictionary; French-English, English-French.* Concise ed. Toronto, McClelland and Stewart, 1962. 861 p.
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- Canadian hospital directory.* Toronto, Canadian Hospital Association. Annual.
- Canadian medical directory.* Toronto, Seccombe House. Annual.
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- A Dictionary of Canadianisms on historical principles.* Toronto, W. J. Gage, 1967. 926 p. (Dictionary of Canadian English)
- Encyclopedia Canadiana.* Centennial ed. Toronto, Grolier of Canada, 1966. 10 v.
- GARIGUE, Philippe. *Bibliographie du Québec (1955-1965)*, par Philippe GARIGUE avec la collaboration de Raymonde SAVARD. Montréal, Presses de l'Université de Montréal, 1967. 227 p.
- HENDERSON, G. F. *Federal royal commissions in Canada, 1867-1968: a checklist.* Toronto, University of Toronto Press, 1967. 212 p.
- Index to Canadian legal periodical literature, 1963-65.* Montreal, Canadian Association of Law Libraries, 1966. 316 p.
- LAWRENCE LANDE FOUNDATION FOR CANADIAN HISTORICAL RESEARCH. *Confederation pamphlets; a check-list—liste abrégée.* Montreal, McGill University, 1967. 67 p. (Its Publications no. 3)
- Library directory. Répertoire des bibliothèques canadiennes.* Part II of January issue of Canadian Library. Canadian Library Association, Association canadienne des bibliothèques. Ottawa. Annual. Annuel.
- Livres et auteurs canadiens; panorama de la production littéraire.* Montréal, Éditions Jumonville. Annual.
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- Slavica Canadiana.* Winnipeg, Canadian Association of Slavists. Annual.
- TANCHE, Raymond. *Bibliography of Canadian bibliographies.* Toronto, University of Toronto Press, 1960. 206 p. With biennial supplements.
- TANCHE, Raymond. *Bibliographie des bibliographies canadiennes.* Toronto, University of Toronto Press, 1960. 206 p. Avec suppléments biennaux.
- TORONTO. Public Library. *Books for youth; a guide for teen-age readers.* Ed. by Catherine C. ROBERTSON and others. 3d ed. Toronto, 1966. 154 p.
- URQUHART, M. C., and BUCKLEY, K. A. H. *Historical statistics of Canada.* Cambridge, Eng., University Press; Toronto, Macmillan, 1965. 672 p.
- WATSON, R. E., and BELL, I. F., comps. *On Canadian literature, 1806-1960; a check list of articles, books, and theses on English-Canadian literature, its authors, and language.* Toronto, University of Toronto Press, 1966. 165 p.

Section 2.—Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds—federal and provincial—is centralized. Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources of information with which to communicate. Other fields of effort

such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces and data may be obtained concerning the individual provincial efforts in these fields from the respective provincial government departments. However, certain federal departments are also concerned with specific aspects of these subjects and, as in the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole. The Government of Canada, while not administering the resources within the provincial boundaries, co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions on forest research, forest fire protection and reforestation offer good examples.

Certain Federal Government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Publicity Branch, Department of Industry, Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Radio-Television Commission; and the National Film Board. The Departments of Agriculture, Energy, Mines and Resources, Fisheries and Forestry, Indian Affairs and Northern Development and Labour, and such agencies as the National Museums of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, although several of the latter have publicity branches.

Thus, inquiries for information of a statistical nature should be forwarded to the Information Division, Dominion Bureau of Statistics, Ottawa. Inquiries to federal sources for information not of a statistical nature should be sent as a general rule to the individual departments and agencies of government which are listed, with their functions, in the Appendix to this publication. Inquiries relating to provincial efforts may be directed to the provincial government department concerned.

Section 3.—Sale of Official Publications

Under the provisions of the Public Printing and Stationery Act, the Queen's Printer, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sect. 7(e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer issues the *Daily Checklist of Government Publications* which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the *Daily Checklist* without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer also issues the *Monthly Catalogue of Canadian Government Publications*, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an *Annual Catalogue* (in

January. Listing all publications issued during the previous year, as well as sectional and annual price and selected titles bulletins advertising new government publications.

The Queen's Printer is the national sales agent in Canada for publications issued by the United Nations; the United Nations Educational, Scientific and Cultural Organization; the World Health Organization; the Food and Agriculture Organization; the Organization for Economic Cooperation and Development; the International Atomic Energy Agency; the International Civil Aviation Organization; the Council of Europe; the Commonwealth Economic Committee; the Organization of American States (Pan American Union); the General Agreement on Tariffs and Trade; the New Zealand Government; the International Labour Organization; the World Meteorological Organization; and the International Telecommunication Union.

Canadian government and international organizations publications may be obtained from the Canadian Government bookshops located in Halifax, Ottawa, Toronto, Montreal, Winnipeg and Vancouver (see imprint on the reverse side of the title page), or by mail from the Queen's Printer, Ottawa.

Dominion Bureau of Statistics Publications.—The Dominion Bureau of Statistics is the agent of the Queen's Printer with respect to the sale of DBS publications. The *Canada Year Book* and *Canadian Yearbook Canada* constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

DBS publications are listed with their prices in the DBS section of the Queen's Printer's Catalogues of *Canadian Government Publications*. The *DBS Daily Bulletin* and *Weekly Bulletin*, prepared by the Information Division and available free of charge, are designed for newspaper editors wishing to keep closely informed on the full range of published material issued by the Bureau. Subscription orders for DBS publications or orders for single copies should be addressed to the Publications Distribution Unit, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada; subscription order forms may be procured from the same source.

Provincial Government Publications.—Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addressed to the provincial capital cities:—

Newfoundland.....St. John's
 Prince Edward Island...Charlottetown
 Nova Scotia.....Halifax
 New Brunswick.....Fredericton
 Quebec.....Quebec

Ontario.....Toronto
 Manitoba.....Winnipeg
 Saskatchewan.....Regina
 Alberta.....Edmonton
 British Columbia.....Victoria

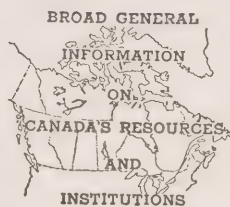
DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

Sources for Federal Data

Dept. of Agriculture
Information Division
Dept. of Consumer and Corporate
Affairs
Information and Public Relations
Branch
Dept. of Energy, Mines and Resources
Public Relations and Information
Services
Dept. of Finance
Information Service
Dept. of Fisheries and Forestry
Information and Consumer Service
Dept. of Indian Affairs and Northern
Development
Public Information Adviser
Dept. of Industry, Trade and Com-
merce
Publicity Branch
Dept. of Labour
Public Relations and Information
Services
Dept. of Manpower and Immigration
Information Service
Dept. of National Health and Welfare
Information Services
Dept. of National Revenue
Taxation Division, Information
Service
Dept. of Secretary of State
Information Services
Dept. of Supply and Services
Information Division
National Library
Queen's Printer (*Canada Gazette*,
Statutes of Canada, annual,
monthly and sectional cata-
logues)
National Film Board (films, film-
strips, photographs on all sub-
jects)
Dominion Bureau of Statistics

Subject



Sources for Provincial Data

For broad general information in regard to particular provinces, application should be made to: Nfld., Dept. of Provincial Affairs; P.E.I., Tourist and Information Bureau; N.S., Dept. of Provincial Secretary; N.B., Dept. of Natural Resources, Travel Bureau; Que., Dept. of Industry and Commerce, Bureau of Statistics, or Dept. of Tourism, Game and Fish; Ont., Dept. of Treasury and Economics or Dept. of Tourism and Information; Man., Dept. of Industry and Commerce or Dept. of Government Services; Sask., Dept. of Industry and Commerce or Executive Council; Alta., Government Publicity Bureau; B.C., Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.

Dept. of Agriculture
Information Division
Canadian Wheat Board
Central Mortgage and Housing Cor-
poration (mortgage loans for
farm houses)
Dept. of Finance (farm improvement
loans)
Dept. of Industry, Trade and Com-
merce
Agriculture, Fisheries and Food
Branch
Machinery Branch
Dept. of Manpower and Immigration
Dept. of Regional Economic Expan-
sion
Dept. of Veterans Affairs (veterans
farm loans)
Farm Credit Corporation (mortgage
loans; Farm Machinery Syndi-
cates Credit Act loans)
National Capital Commission
(relating to Capital Planning)

AGRICULTURE General and Farming

Nfld.—Dept. of Mines, Agriculture,
and Resources
P.E.I., N.S., N.B., Man., Sask.,
Alta., B.C.—Depts. of Agri-
culture
Que.—Dept. of Agriculture and
Colonization, Information and
Research Branch
Dept. of Industry and Commerce,
Bureau of Statistics
Ont.—Dept. of Agriculture and
Food, Farm Economics and
Statistics Branch and Informa-
tion Branch

<u>Sources for Federal Data</u>	<u>Subject</u>	<u>Sources for Provincial Data</u>
National Research Council Prairie Regional Laboratory Saskatoon, Sask. (utilization of crops and crop products) Queen's Printer (agent for FAO publications) National Film Board Dominion Bureau of Statistics	<div>AGRICULTURE</div> <div>—concluded</div>	
Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of Energy, Mines and Resources Polar Continental Shelf Project Observatories Branch Geological Survey of Canada Surveys and Mapping Branch Marine Sciences Branch Dept. of National Defence Information Service Defence Research Board Dept. of National Health and Welfare Dept. of Public Works Information Services (highways, marine and accommodation) Dept. of Transport (airports, weather stations, navigation, supply) Information Services Fisheries Research Board of Canada National Library (books) National Museums of Canada National Research Council Division of Building Research (permafrost, building in the North, snow and ice) Public Archives (history) National Film Board	<div>ARCTIC</div>	
National Gallery of Canada (collections, exhibitions of works of art) Canada Council Dept. of Indian Affairs and Northern Development Division of Social and Cultural Development (Eskimo arts—visual only) Dept. of Public Works Information Services (fine arts, federal buildings) Dept. of Secretary of State National Arts Centre National Library (books) Queen's Printer (National Gallery exhibition catalogues, reproductions of paintings, coloured slides, etc.)	<div>ARTS</div> <div>Performing and Visual</div>	Nfld.:—Dept. of Provincial Affairs P.E.I.:—Dept. of Education N.S.:—Dept. of Provincial Secretary N.B.:—Dept. of Natural Resources, Travel Bureau Que.:—Dept. of Cultural Affairs Ont.:—Province of Ontario Council for the Arts Man.:—Manitoba Arts Council Sask.:—Saskatchewan Arts Board (Education) Alta.:—Dept. of Provincial Secretary, Cultural Development Branch B.C.:—Dept. of Education, Community Programmes Branch
Atomic Energy of Canada Limited (research studies, sale of radio-isotopes) Atomic Energy Control Board (policy, regulations) Dept. of Energy, Mines and Resources Energy Development Group Geological Survey of Canada Mines Branch Eldorado Nuclear Limited Queen's Printer (agent for International Atomic Energy Agency publications)	<div>ATOMIC ENERGY</div>	N.S.:—Dept. of Trade and Industry Que.:—Dept. of Natural Resources Hydro-Quebec Ont.:—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario Man.:—Dept. of Industry and Commerce, Manitoba Research Council University of Manitoba, Physics Dept. Sask.:—University of Saskatchewan Alta.:—Alberta Research Council B.C.:—University of British Columbia

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Transport
Civil Aviation Branch (control;
licensing; airports and air navigation
facilities)
Information Services
Air Canada
Canadian Transport Commission
Air Transport Committee
Dept. of Energy, Mines and Resources
Legal Surveys and Aeronautical
Charts Division
Dept. of Industry, Trade and Commerce
Aerospace, Marine and Rail Branch
Materials Branch
Dept. of National Defence
Information Service
Dept. of National Health and Welfare
Civil Aviation Medicine Division
Dept. of Supply and Services
National Museums of Canada (historical)
National Research Council
National Aeronautical Establishment
Queen's Printer (agent for International
Civil Aviation Organization publications)
National Film Board
Dominion Bureau of Statistics

AVIATION

Nfld.:—Dept. of Mines, Agriculture,
and Resources
Que.:—Quebec Government Air
Services
Ont.:—Dept. of Lands and Forests,
Forest Protection Branch
Man.:—Manitoba Government Air
Services
Dept. of Industry and Commerce
Sask.:—Dept. of Industry and Commerce

Bank of Canada
Industrial Development Bank
Central Mortgage and Housing Corporation
Dept. of Finance (for banking; also
small business loans)
Dept. of Insurance (trust and mortgage
loan business)
Canada Deposit Insurance Corporation
Dominion Bureau of Statistics

BANKING
Trust and Loan
Companies
Foreign Exchange

(Nfld.:—Dept. of Finance
Dept. of Provincial Affairs
P.E.I., N.S.:—Depts. of Provincial
Secretary
N.B.:—Dept. of Finance
Dept. of Provincial Secretary
Que.:—Dept. of Financial Institutions,
Companies and Co-operatives
Dept. of Industry and Commerce,
Bureau of Statistics
Ont.:—Province of Ontario Savings
Office
Ontario Development Corporation
Dept. of Financial and Commercial
Affairs
Man.:—Dept. of Provincial Secretary
Manitoba Development Fund
Manitoba Agricultural Credit Corporation
Dept. of Finance
Sask.:—Provincial Secretary, Registrar
of Securities
Dept. of Co-operation and Co-operative
Development
Alta.:—Treasury Dept., Superintendent
of Treasury Branches
Dept. of Attorney General, Alberta
Security Commission
B.C.:—Dept. of Finance, Inspector
of Trust Companies

Dept. of Consumer and Corporate
Affairs
Superintendent of Bankruptcy
Dominion Bureau of Statistics

BANKRUPTCY

(Nfld.:—Dept. of Justice
P.E.I., N.S., N.B., Alta., B.C.:—
Depts. of Attorney General
Que.:—Minister of Justice
Ont.:—Dept. of Financial and Commercial
Affairs
Man., Sask.:—Depts. of Provincial
Secretary

Sources for Federal Data	Subject	Sources for Provincial Data
<p>National Library (information re Canadian publications and books in Canadian libraries; national bibliographies of other countries)</p> <p>Library of Parliament (political and parliamentary matters)</p> <p>National Gallery of Canada (information on art books and periodicals)</p> <p>National Research Council</p> <p>National Science Library (information re identification and location of scientific serials and research reports)</p> <p>Queen's Printer (Official Classification of Canadian Government Publications; annual, monthly and sectional catalogues)</p> <p>Dominion Bureau of Statistics</p> <p>Information Division (for statistical publications)</p>	BIBLIOGRAPHY	<p>Nfld.:—Dept. of Education</p> <p>Public Libraries Board</p> <p>Dept. of Provincial Affairs, Archives</p> <p>P.E.I.:—Dept. of Education</p> <p>Legislative Librarian</p> <p>N.S., N.B.:—Depts. of Education, Provincial Librarian</p> <p>Que.:—Office of Quebec Secretary</p> <p>Provincial Archives</p> <p>National Assembly Library</p> <p>Dept. of Cultural Affairs</p> <p>Ont.:—Dept. of Education, Provincial Library Service</p> <p>Legislative Library</p> <p>Man.:—Provincial Librarian</p> <p>Sask.:—Provincial Library</p> <p>Legislative Library</p> <p>Alta.:—Dept. of Provincial Secretary</p> <p>Provincial Library,</p> <p>Provincial Museum and Archives</p> <p>B.C.:—Dept. of Provincial Secretary</p> <p>Provincial Library and Archives</p> <p>Public Library Commission</p>
<p>Dept. of Secretary of State</p> <p>Secretariat on Bilingualism</p> <p>Translation Bureau</p> <p>Public Service Commission</p> <p>Language Bureau</p>	BILINGUALISM	
<p>Dept. of National Health and Welfare</p> <p>Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)</p>	BLINDNESS ALLOWANCES	<p>Sources same as for "Old Age Assistance"</p>
<p>Canadian Broadcasting Corporation</p> <p>Canadian Radio-Television Commission</p> <p>Overseas Telecommunications Corporation</p> <p>Industry, Trade and Commerce</p> <p>Industrial and Electronics Branch</p> <p>National Research Council</p> <p>Radio and Electrical Engineering</p> <p>Branch (radio science and its application to industry)</p>	BROADCASTING Radio and Television	<p>Que.:—Dept. of Education</p> <p>Ont.:—Ontario Provincial Police,</p> <p>Radio Communications Branch</p> <p>Ryerson Institute of Technology,</p> <p>Toronto, Radio Station CJRT-FM</p> <p>Sask.:—Dept. of Natural Resources,</p> <p>Communications Division</p> <p>Alta.:—Radio CKUA, Edmonton,</p> <p>operated by Alberta Government</p> <p>Telephones</p> <p>B.C.:—Dept. of Lands, Forests, and</p> <p>Water Resources, Radio Section</p>
<p>National Mortgage and Housing Corporation (NHA financing, house designs, building standards)</p> <p>Canadian Government Specifications Board</p> <p>Canadian Standards Association</p> <p>Dept. of Finance (Farm Improvement Loans Act; Small Businesses Loans Act)</p> <p>Dept. of Indian Affairs and Northern Development</p> <p>Community Affairs Branch</p> <p>Technical Services Branch</p> <p>Dept. of Industry, Trade and Commerce</p> <p>Materials Branch</p> <p>Wood Products Branch</p>	BUILDING CONSTRUCTION	<p>Nfld., N.B.:—Depts. of Public Works</p> <p>P.E.I.:—Dept. of Industry and</p> <p>Natural Resources</p> <p>N.S.:—Dept. of Trade and Industry</p> <p>Dept. of Labour</p> <p>Nova Scotia Housing Commission</p> <p>Que.:—Dept. of Municipal Affairs</p> <p>Quebec Housing Corporation</p> <p>Dept. of Industry and Commerce,</p> <p>Bureau of Statistics</p> <p>Ont.:—Dept. of Labour, Factory</p> <p>Inspection Branch</p> <p>Ontario Housing Corporation</p> <p>Dept. of Public Works</p> <p>Dept. of Municipal Affairs, Community Planning Branch</p>

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of National Health and Welfare
Hospital Design Division
Dept. of Public Works
Information Services
Dept. of Transport
Air Services Construction Branch
(airport terminal buildings, etc.)
Dept. of Veterans Affairs (Soldier
Settlement and Veterans Land
Act)
Farm Credit Corporation
National Research Council
Division of Building Research
Dominion Bureau of Statistics

**BUILDING
CONSTRUCTION**
—concluded

Man.:—Dept. of Industry and Com-
merce
Sask.:—Dept. of Labour
Alta.:—Dept. of Industry and
Tourism, Alberta Bureau of
Statistics
Dept. of Labour
B.C.:—Dept. of Industrial Develop-
ment, Trade, and Commerce,
Bureau of Economics and
Statistics

Dept. of Industry, Trade and Com-
merce
Chemicals Branch
Dominion Bureau of Statistics

CHEMICALS

Que.:—Dept. of Natural Resources
Ont.:—Ontario Research Founda-
tion
Man.:—Dept. of Industry and Com-
merce
Sask.:—Dept. of Industry and Com-
merce
Alta.:—Alberta Research Council
Dept. of Industry and Tourism,
Industrial Development Branch
B.C.:—British Columbia Research
Council

Dept. of Secretary of State
Citizenship Branch
Citizenship Registration Branch
National Film Board

CITIZENSHIP
See also
"Population"

Ont.:—Dept. of Provincial Secretary
and Citizenship

Emergency Measures Organization
Dept. of National Defence
Dept. of National Health and Welfare
Emergency Health Services
Emergency Welfare Services
Dept. of Supply and Services

**CIVIL
DEFENCE**

Nfld.:—Dept. of Provincial Affairs
P.E.I., N.S.:—Depts. of Provincial
Secretary
N.B.:—Dept. of Municipal Affairs
Que.:—Dept. of Family and Social
Welfare
Ont.:—Dept. of Attorney General,
Emergency Measures Organiza-
tion
Man.:—Dept. of Municipal Affairs,
Emergency Measures Organiza-
tion
Sask.:—Emergency Measures Or-
ganization
Executive Council
Alta.:—Emergency Measures Organ-
ization
B.C.:—Dept. of Provincial Secre-
tary, Provincial Co-ordinator

Dept. of Transport
Meteorological Branch, Toronto
National Research Council
Division of Building Research,
(Climatological Atlas of Canada,
National Building Code)
Queen's Printer (agent for World
Meteorological Organization
publications)

CLIMATE

Que.:—Dept. of Natural Resources,
Meteorological Bureau
Ont.:—Dept. of Agriculture and
Food, Farm Economics and
Statistics Branch
Man., Alta.:—Depts. of Agriculture
Sask.:—Saskatchewan Research
Council
B.C.:—Dept. of Agriculture
Dept. of Lands, Forests, and
Water Resources, Hydrology
Division

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Energy Development Group Geological Survey of Canada Mines Branch Dept. of Industry, Trade and Commerce Materials Branch Dominion Coal Board Dominion Bureau of Statistics	COAL	N.S.:—Dept. of Mines N.B., Que.:—Depts. of Natural Resources Ont.:—Dept. of Mines Dept. of Energy and Resources Management Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Dept. of Industry and Commerce Alta.:—Dept. of Mines and Minerals Alberta Research Council B.C.:—Dept. of Mines and Petroleum Resources
Dept. of Consumer and Corporate Affairs Director of Investigation and Research Restrictive Trade Practices Commission	COMBINES	
Dept. of Communications Canadian Broadcasting Corporation Canadian Overseas Telecommunication Corporation Canadian Radio-Television Commission Canadian Transport Commission Railway Committee Dept. of Indian Affairs and Northern Development Dept. of Industry, Trade and Commerce Electrical and Electronics Branch Dept. of Transport (radio aids, aeronautical and marine navigation) Meteorological Branch National Museums of Canada (historical) Queen's Printer (agent for International Telecommunication Union publications) Dominion Bureau of Statistics	COMMUNICATIONS <i>See also</i> "Postal Service"	Nfld.:—Dept. of Community and Social Development Board of Public Utilities Commissioners P.E.I.:—Tourist and Information Bureau Dept. of Public Works N.S.:—Board of Commissioners of Public Utilities N.B.:—Dept. of Provincial Secretary, Travel Bureau Que.:—Dept. of Transportation and Communications Ont.:—Ontario Telephone Service Commission Ontario Provincial Police, Radio Communications Branch Man.:—Manitoba Telephone System Sask.:—Saskatchewan Government Telephones Alta.:—Alberta Government Telephones B.C.:—Dept. of Commercial Transport
Dept. of Secretary of State Citizenship Branch Company of Young Canadians	COMMUNITY AND INTER-CULTURAL RELATIONS	
Central Mortgage and Housing Corporation Company of Young Canadians Dept. of Indian Affairs and Northern Development Community Affairs Branch Technical Services Branch Dept. of National Health and Welfare (social welfare and recreation)	COMMUNITY PLANNING	Nfld.:—Dept. of Municipal Affairs and Supply Dept. of Community and Social Development P.E.I., N.S., N.B.:—Depts. of Municipal Affairs Que.:—Dept. of Municipal Affairs Industrial Development Bureau Economic Advisory Council Ont.:—Dept. of Municipal Affairs, Community Planning Branch Dept. of Education, Community Programmes Branch

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Regional Economic Expansion
(Rural Economic Development)
National Capital Commission
Information Services (general information on the Plan for the National Capital of Canada)
National Film Board

COMMUNITY
PLANNING
—concluded

Man.:—Dept. of Municipal Affairs, Planning Branch
Dept. of Industry and Commerce, Regional Development Branch
Sask.:—Dept. of Municipal Affairs, Community Planning Branch
Executive Council, Economic Development Board
Alta.:—Dept. of Municipal Affairs, Provincial Planning Office
B.C.:—Dept. of Municipal Affairs, Regional Planning Division
Lower Mainland Regional Planning Board

Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch
Canadian Wildlife Service
Northern Administration Branch
Dept. of Agriculture
Prairie Farm Rehabilitation Administration Division
Information Division
Economics Branch
Dept. of Fisheries and Forestry
Information and Consumer Service
National Capital Commission (National Capital planning)
National Museums of Canada
National Film Board

CONSERVATION

Nfld.:—Dept. of Mines, Agriculture, and Resources
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Dept. of Lands and Forests
N.B.:—Dept. of Natural Resources
Que.:—Dept. of Lands and Forests
Dept. of Tourism, Game and Fish
Dept. of Natural Resources
Ont.:—Dept. of Energy and Resources Management, Conservation Authorities Branch
Ontario Agricultural College, Guelph
Man.:—Dept. of Mines and Natural Resources, Conservation Education Branch
Sask.:—Dept. of Natural Resources
Dept. of Agriculture, Conservation and Development Branch
Alta.:—Dept. of Lands and Forests
Dept. of Agriculture (land utilization)
B.C.:—Dept. of Lands, Forests and Water Resources
Dept. of Recreation and Conservation

Privy Council Office
Dept. of Consumer and Corporate Affairs (Great Seal of Canada, etc.)
Dept. of Justice
Dept. of Secretary of State
Library of Parliament
Public Archives
Queen's Printer (Statutes of Canada, Hansard, Organization of the Government of Canada Handbooks, and Daily Checklist of Government Publications)

CONSTITUTION

All Provinces except Nfld., Que. and B.C.:—Depts. of Attorney General
Nfld.:—Dept. of Justice
Que.:—Dept. of Intergovernmental Affairs
B.C.:—Provincial Secretary

Dept. of Consumer and Corporate Affairs
Dominion Bureau of Statistics (indexes)

CONSUMER
AFFAIRS
Consumer
Price Indexes

See also
"Cost of Living"

P.E.I., N.S., N.B.:—Depts. of Provincial Secretary
Man.:—Dept. of Consumer and Corporate Affairs
Alta.:—Treasury Dept., Consumer Credit Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Economics Branch Central Mortgage and Housing Corporation (mortgage-lending activities) Dept. of Consumer and Corporate Affairs Corporations Branch Dept. of Fisheries and Forestry Economics Service Indian Affairs and Northern Development Eskimo Economic Development Branch Dept. of Insurance (Co-operative Credit Associations Act)	CO-OPERATIVES (including Credit Unions)	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Agriculture Que.:—Dept. of Financial Institutions, Companies and Co-operatives Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture and Food, Co-operatives Branch Man.:—Dept. of Agriculture, Co-operative and Credit Union Services Branch Dept. of Finance Sask.:—Dept. of Co-operation and Co-operative Development Alta.:—Dept. of Industry and Tourism, Co-operative Activities and Credit Union Branch B.C.:—Attorney General's Dept., Registrar of Companies
Dept. of Consumer and Corporate Affairs Dominion Bureau of Statistics (wholesale and retail prices and consumer price index)	COST OF LIVING See also "Consumer Affairs"	Nfld.:—Dept. of Municipal Affairs and Supply N.B.:—Dept. of Finance, Economic Adviser Que.:—Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Treasury and Economics Man.:—Dept. of Industry and Commerce, Economic, Business and Transportation Research Branch Sask.:—Dept. of Labour Alta.:—Dept. of Industry and Tourism, Alberta Bureau of Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Indian Council Dept. of Indian Affairs and Northern Development Indian-Eskimo Economic Development Branch National and Historic Parks Branch Dept. of Industry, Trade and Commerce National Design Council Dept. of Veterans Affairs (veterans only) National Library (books) National Museums of Canada Public Archives Queen's Printer (UNESCO coloured slides) National Film Board	CREATIVE ARTS AND HANDICRAFTS	Nfld.:—Dept. of Education P.E.I.:—Dept. of Tourist Development Dept. of Education, Physical Fitness Division N.S.:—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art N.B.:—Dept. of Finance Que.:—Dept. of Cultural Affairs Dept. of Agriculture and Colonization Ont.:—Dept. of Education, Community Programmes Branch Dept. of Agriculture and Food, Home Economics Service Ontario Gift Foundation Man.:—Dept. of Agriculture, Extension Service Dept. of Health and Social Services, Native Handicraft Promotion Officer Manitoba Development Authority Sask.:—Dept. of Education, Continuing Education Branch Saskatchewan Arts Board Alta.:—Dept. of Provincial Secretary, Cultural Development Branch B.C.:—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programmes Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Solicitor General Canadian Penitentiary Service National Parole Board Royal Canadian Mounted Police Dept. of Justice Criminal Law Section Dept. of National Health and Welfare Research and Statistics Division National Film Board Dominion Bureau of Statistics	<div>CRIME AND DELINQUENCY</div>	All Provinces except Nfld.:—Depts. of Attorney General Nfld.:—Dept. of Justice Dept. of Public Welfare <i>Additional:—P.E.I., Sask.:—Depts. of Welfare</i> N.S.:—Dept. of Public Welfare Que.:—Dept. of Family and Social Welfare Dept. of Justice Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Correctional Services Man.:—Dept. of Health and Social Services B.C.:—Dept. of Social Welfare
See Appendix for a list of Crown corporations giving the functions of each and the Cabinet Minister through whom each reports to Parliament.	<div>CROWN CORPORATIONS</div>	(For information with regard to individual Crown corporations apply as follows:— Nfld.:—Dept. of Justice Dept. of Public Works P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Finance and Industry, Treasury Board Que.:—Dept. of Finance Dept. of Financial Institutions, Companies and Co-operatives Ont.:—Dept. of Provincial Secretary Man.:—Dept. of Finance Public Utilities Board Sask.:—Government Finance Office Alta.:—Dept. of Industry and Tourism B.C.:—Attorney General's Dept.
Bank of Canada Royal Canadian Mint	<div>CURRENCY</div>	
Dept. of Agriculture Dairy Products Division Health of Animals Branch Research Branch Animal Research Institute Food Research Institute Canadian Dairy Commission Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch National Film Board Dominion Bureau of Statistics	<div>DAIRYING</div>	Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I., N.S.:—Depts. of Agriculture N.B., Ont., Alta., B.C.:—Depts. of Agriculture, Dairy Branches (also Milk Industry Board of Ont. and Milk Control Board for B.C.) Que.:—Dept. of Agriculture and Colonization, Dairy Products Branch Dept. of Industry and Commerce, Bureau of Statistics Man.:—Dept. of Agriculture, Animal Industry Branch Sask.:—Dept. of Agriculture, Animal Industry Branch Milk Control Board
	<div>DEATHS</div> <div>See "Vital Statistics"</div>	
Dept. of National Defence Information Service Defence Research Board Dept. of External Affairs (NATO) Dept. of Supply and Services Canadian Commercial Corporation Canadian Arsenals Limited	<div>DEFENCE</div> <div>See also</div> <div>"Civil Defence"</div>	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Veterans Affairs (war disabled veterans)	<div>DISABLED PERSONS ALLOWANCES</div>	Nfld.:—Dept. of Public Welfare P.E.I.:—Dept. of Welfare N.S.:—Dept. of Public Welfare N.B.:—Dept. of Health and Welfare Que.:—Dept. of Family and Social Welfare, Social Allowances Commission Ont.:—Dept. of Social and Family Services, Family Benefits Branch Man.:—Dept. of Health and Social Services Sask.:—Dept. of Welfare, Director of Public Assistance Alta.:—Dept. of Public Welfare B.C.:—Dept. of Social Welfare, Division on Aging Y.T.:—Dept. of Welfare (Director) N.W.T.:—Dept. of Social Development (Director)
Economic Council of Canada Dept. of Finance Dept. of Indian Affairs and Northern Development Northern Economic Development Branch Dept. of Manpower and Immigration Planning and Evaluation Branch Dept. of Regional Economic Expansion Dept. of Secretary of State (financial support to post-secondary education) Treasury Board	<div>ECONOMIC PLANNING</div>	Nfld.:—Dept. of Community and Social Development P.E.I.:—Dept. of Economic Development N.S.:—Dept. of Finance and Economics N.B.:—Dept. of Economic Growth Que.:—Dept. of Industry and Commerce, Economic Advisory Council Dept. of Labour Dept. of Family and Social Welfare Ont.:—Dept. of Treasury and Economics Man.:—Dept. of Finance Dept. of Industry and Commerce Sask.:—Dept. of Industry and Commerce Alta.:—Dept. of Industry and Tourism B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Regional Economic Expansion Bank of Canada Central Mortgage and Housing Corporation Company of Young Canadians Dept. of Agriculture Economics Branch Dept. of Consumer and Corporate Affairs Bureau of Consumer Affairs Dept. of Energy, Mines and Resources Mineral Resources Branch Dept. of Finance Financial Affairs Division Dept. of Fisheries and Forestry Economics Service Dept. of Indian Affairs and Northern Development Policy, Planning and Programming Northern Economic Development Branch Dept. of Industry, Trade and Commerce Office of Economics Dept. of Labour Public Relations and Information Services Dept. of Manpower and Immigration Research Branch Dept. of National Health and Welfare Research and Statistics Directorate	<div>ECONOMIC AND SOCIAL RESEARCH</div>	Nfld.:—Dept. of Community and Social Development P.E.I.:—Dept. of Industry and Natural Resources Dept. of Economic Development N.S.:—Dept. of Trade and Industry Nova Scotia Research Foundation N.B.:—Dept. of Finance Que.:—Dept. of Industry and Commerce, Economic Research Bureau, Bureau of Statistics Planning Bureau Ont.:—Dept. of Treasury and Economics Dept. of Trade and Development Dept. of Agriculture, Farm Economics and Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Alcoholism and Drug Addiction Research Foundation of Ontario Man.:—Dept. of Industry and Commerce, Economic Business and Transportation Research Branch Manitoba Economic Consultative Board Office of the Provincial Treasurer Dept. of Agriculture, Economic Division

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Secretary of State
Citizenship Branch (social research
and adult education services)
Dept. of Transport
Transportation Policy and Re-
search Branch
Fisheries Research Board of Canada
Public Archives (early data)
Queen's Printer (agent for UNESCO,
Commonwealth Economic Com-
mittee and OECD publications)
Dominion Bureau of Statistics

**ECONOMIC
AND SOCIAL
RESEARCH—concl.**

Sask.:—Executive Council
Economic Development Board
Dept. of Industry and Commerce
Dept. of Co-operation and Co-
operative Development, Re-
search and Statistical Division
Alta.:—Dept. of Industry and
Tourism
B.C.:—Dept. of Industrial Develop-
ment, Trade, and Commerce,
Bureau of Economics and Sta-
tistics

Dominion Bureau of Statistics
Canada Council
Canadian Broadcasting Corporation
(educational broadcasts)
Canadian Radio-Television Commis-
sion
Central Mortgage and Housing Cor-
poration
Information Division
Company of Young Canadians
Dept. of Finance (Canada Student
Loans Act)
Dept. of Fisheries and Forestry
Information and Consumer Service
Dept. of Indian Affairs and Northern
Development
Educational Branch
(Social Affairs Program)
Dept. of Manpower and Immigration
Programs Branch
Dept. of National Defence
Director of Education (service
dependants' schools)
Dept. of National Health and Welfare
Dept. of Secretary of State
Citizenship Branch (educational
travel and exchange programs)
Education Support Branch
Dept. of Veterans Affairs (veterans
and children of war dead)
National Capital Commission
Information Services
National Museums of Canada
National Gallery of Canada (lec-
tures, tours, films)
National Research Council
Office for Economic Studies on
Research and Development
(science and engineering students
registered in Canadian graduate
schools)
Queen's Printer (agent for UNESCO
publications)

EDUCATION

See also
"Motion Pictures"
and "Photographic
Material"

All Provinces except Man.:—
Depts. of Education (technical,
visual, audio and all other phases
of education)
Man.:—Dept. of Youth and Educa-
tion
Dept. of Labour, Apprenticeship
Division
Additional:—Alta.:—Dept. of La-
bour, Apprenticeship Board
B.C.:—Dept. of Labour, Appren-
ticeship and Industrial Training
Branch

Chief Electoral Office
Library of Parliament
Office of the Representation Com-
missioner
Public Archives

ELECTIONS

Nfld.:—Dept. of Provincial Affairs
P.E.I., N.S., N.B., Ont.:—Depts. of
Provincial Secretary
Que.:—Chief Returning Officer
Man., B.C.:—Chief Electoral Of-
ficers
Sask., Alta.:—Clerks of the Execu-
tive Councils

Dept. of Energy, Mines and Re-
sources
Energy Development Group
National Energy Board

**ELECTRIC
POWER**

Nfld.:—Newfoundland and Labrador
Power Commission
P.E.I.:—Public Utility Commission
N.S., Alta.:—Power Commissions
N.B.:—New Brunswick Electric
Power Commission
Que.:—Hydro-Electric Commission
Dept. of Natural Resources

Sources for Federal Data	Subject	Sources for Provincial Data
National Research Council <i>Radio and Electrical Engineering Division</i> Northern Canada Power Commission National Film Board Dominion Bureau of Statistics	ELECTRIC POWER—concl.	Ont.:—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario Man.:—Manitoba Hydro Winnipeg City Hydro Sask.:—Saskatchewan Power Corporation B.C.:—British Columbia Hydro and Power Authority
Dept. of Labour Economics and Research Branch Public Relations and Information Services Dept. of Manpower and Immigration (Canada Manpower Division) (Canada Manpower Centres) Public Service Commission (staffing the public service) Queen's Printer (agent for ILO publications) Dominion Bureau of Statistics	EMPLOYMENT	Nfld., N.S., N.B., Sask.:—Depts. of Labour P.E.I.:—Dept. of Labour and Manpower Resources Civil Service Commission Que.:—Dept. of Labour, Manpower Centres Bureau of Statistics Ont.:—Dept. of Treasury and Economics Dept. of Labour Dept. of Civil Service Man.:—Dept. of Labour Dept. of Industry and Commerce Civil Service Commission Alta.:—Dept. of Labour Dept. of Industry and Tourism B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Indian Affairs and Northern Development Indian-Eskimo Bureau Northern Science and Research Dept. of National Health and Welfare (health and hospital services) National Museums of Canada	ESKIMOS	Nfld.:—Dept. of Labrador Affairs Dept. of Public Welfare Que.:—Dept. of Natural Resources, New Quebec Branch
Canadian Government Exhibition Commission Central Mortgage and Housing Corporation (housing exhibits) Dept. of Agriculture Livestock Division Dept. of Energy, Mines and Resources Public Relations and Information Services Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of Industry, Trade and Commerce Fairs and Missions Branch Public Branch Dept. of Labour Public Relations and Information Services Dept. of Manpower and Immigration Information Service Dept. of National Defence Directorate of Exhibitions and Displays Dept. of National Health and Welfare Information Division Dept. of Public Works Information Services National Capital Commission National Museums of Canada National Gallery of Canada Museum of Natural Sciences Museum of Man Museum of Science and Technology National Film Board	EXHIBITIONS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce Office of Provincial Secretary Dept. of Cultural Affairs Ont.:—Most Ontario Departments organize exhibitions Man.:—Dept. of Agriculture, Extension Service Dept. of Industry and Commerce Sask.:—Dept. of Agriculture Dept. of Industry and Commerce Alta.:—Dept. of Agriculture Alberta Government Publicity Bureau B.C.:—Dept. of Agriculture Dept. of Industrial Development, Trade, and Commerce

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Industry, Trade and Commerce Trade Commissioner Service Fairs and Missions Branch Publicity Branch	EXPORT PROMOTION	Ont.:—Dept. of Trade and Development Man.:—Dept. of Industry and Commerce, Manitoba Export Corporation Sask.:—Dept. of Industry and Commerce
Dept. of External Affairs Information Division Canadian International Development Agency Dept. of Labour International Labour Affairs Branch (ILO; OECD) Queen's Printer (agent for international organizations publications)	EXTERNAL AFFAIRS See also "Trade"	Que.:—Dept. of Intergovernmental Affairs
Dept. of National Health and Welfare (including assistance to families entering Canada not yet eligible for family allowances)	FAMILY AND YOUTH ALLOWANCES	Nfld.:—Dept. of Education (Parents' subsidy) Que.:—Dept. of Family and Social Welfare
Dept. of Agriculture Production and Marketing Branch Plant Research Institute Dept. of Industry, Trade and Commerce Agriculture and Fisheries Branch National Research Council Prairie Regional Laboratory, Saskatoon, Sask. (utilization of crops and crop products) Queen's Printer (agent for FAO publications) National Film Board Dominion Bureau of Statistics	FIELD CROPS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture and Colonization Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture and Food Man.:—Dept. of Agriculture, Soils and Crops Branch Sask.:—Dept. of Agriculture, Plant Industry Branch Alta.:—Dept. of Agriculture, Plant Industry Division B.C.:—Dept. of Agriculture, Field Crops Branch
Dept. of Finance Bank of Canada Queen's Printer (agent for GATT publications) Treasury Board Dominion Bureau of Statistics	FINANCE See also "Taxation"	Nfld., N.B., Man., B.C.:—Depts. of Finance P.E.I., Alta.:—Depts. of Provincial Treasurer N.S.:—Dept. of Finance and Economics Que.:—Dept. of Finance Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Revenue Sask.:—Treasury Dept.
Dept. of Fisheries and Forestry Information and Consumer Service Division (forest fire prevention and forest products fire retardants) Canadian Transport Commission Railway Committee (forest fire protection along railway lines)	FIRE PREVENTION	All Provinces:—Provincial Fire Marshals (for urban and rural fire losses) Nfld.:—Dept. of Mines, Agriculture, and Resources P.E.I.:—Dept. of Municipal Affairs N.S.:—Dept. of Labour N.B.:—Dept. of Natural Resources Dept. of Attorney General Que.:—Dept. of Lands and Forests, Forest Protection Service Dept. of Municipal Affairs, Fire Commissioner

Sources for Federal Data

Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch
Northern Economic Development Branch
Yukon and Mackenzie Forest Services
Dept. of Public Works
Dominion Fire Commissioner
National Research Council
Fire Research Section

Subject

FIRE
PREVENTION—
concluded

Sources for Provincial Data

Ont.:—Dept. of Lands and Forests, Forest Protection Branch
Dept. of Public Works, Fire Prevention Officer
Dept. of Attorney General, Office of the Fire Marshal
Man.:—Dept. of Mines and Natural Resources, Forestry Branch
Dept. of Labour, Fire Prevention Division
Sask.:—Dept. of Natural Resources
Dept. of Labour, Fire Commissioner
Alta.:—Dept. of Lands and Forests
Dept. of Provincial Secretary
B.C.:—Dept. of Lands, Forests and Water Resources

Dept. of Fisheries and Forestry
Information and Consumer Service
Dept. of Finance
Fisheries Improvement Loans Act
Dept. of Indian Affairs and Northern Development
Canadian Wildlife Service
Indian-Eskimo Economic Development Branch (Indian and Eskimo programs)
Dept. of Industry, Trade and Commerce
Agriculture, Fisheries and Food Branch
Dept. of Veterans Affairs (veterans settled as commercial fishermen)
Fisheries Research Board of Canada
National Museums of Canada
Queen's Printer (agent for FAO publications)
Unemployment Insurance Commission (insurance for fishermen)
National Film Board
Dominion Bureau of Statistics

FISHERIES

Nfld., P.E.I., N.S., N.B.:—Depts. of Fisheries
Que.:—Dept. of Tourism, Game and Fish
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:—Dept. of Lands and Forests, Fish and Wildlife Branch
Man.:—Dept. of Mines and Natural Resources, Fisheries Branch
Sask.:—Dept. of Natural Resources, Fisheries Branch
Alta.:—Dept. of Lands and Forests, Fish and Game Branch
B.C.:—Dept. of Recreation and Conservation
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of National Health and Welfare, Food and Drug Laboratory (for standards and methods of control of quality, purity and safety of food and drugs)
Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.)
Dept. of Consumer and Corporate Affairs
Patent and Copyright Office (licensing of patents)
Bureau of Consumer Affairs (economic aspects of labelling and advertising food)
Dept. of Fisheries and Forestry (standards for fish products)
Dept. of Industry, Trade and Commerce
Agriculture, Fisheries and Food Branch
Materials Branch
Queen's Printer (agent for FAO publications)

FOOD
AND DRUGS
See also
"Nutrition"

All Provinces:—Depts. of Health (sanitary inspection of food supplies)

FOREIGN AFFAIRS
See
"External Affairs"

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Fisheries and Forestry
Information and Consumer Service
Dept. of Industry, Trade and Commerce
Wood Products Branch
Materials Branch
National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs)
Dominion Bureau of Statistics

FOREST
RESOURCES
AND
INDUSTRIES

Nfld.:—Dept. of Mines, Agriculture and Resources
P.E.I.:—Dept. of Industry and Natural Resources
Dept. of Agriculture
N.S., Que., Ont., Alta.:—Depts. of Lands and Forests
N.B.:—Dept. of Natural Resources
Man.:—Dept. of Mines and Natural Resources, Forestry Branch
Sask.:—Dept. of Natural Resources, Forestry Branch
Dept. of Industry and Commerce
Saskatchewan Timber Board
B.C.:—Dept. of Lands, Forests and Water Resources
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

FUEL
See "Coal", "Oil
and Natural Gas"
and "Electric
Power"

Dept. of Agriculture
Production and Marketing Branch
Livestock Division (grading)
Research Branch (production)
Dept. of Indian Affairs and Northern Development
Dominion Bureau of Statistics

FUR FARMING
See also
"Trapping"

Nfld.:—Dept. of Mines, Agriculture and Resources
Dept. of Economic Development
P.E.I., N.S., N.B., Alta., B.C.:—Depts. of Agriculture
Que.:—Dept. of Agriculture and Colonization
Dept. of Industry and Commerce, Bureau of Statistics
Ont.:—Dept. of Lands and Forests
Man.:—Dept. of Mines and Natural Resources, Wildlife Branch
Sask.:—Dept. of Natural Resources
Saskatchewan Fur Marketing Service

Dept. of Energy, Mines and Resources
Public Relations and Information Services
Dept. of Agriculture
Soils Research Institute
Fisheries Research Board of Canada (oceanography)
National Library (books)
Public Archives (maps; history of cartography)
National Film Board

GEOGRAPHY

Nfld.:—Dept. of Mines, Agriculture and Resources
P.E.I.:—Travel Bureau
N.S.:—Dept. of Mines
N.B.:—Dept. of Natural Resources
Que.:—Dept. of Lands and Forests
Dept. of Industry and Commerce, Economic Research Bureau, Drafting Division
Dept. of Natural Resources
Northern Studies Centre, Université Laval
Ont.:—Dept. of Lands and Forests, Lands and Surveys Branch
Dept. of Mines
Ontario Agricultural College
Man.:—Dept. of Mines and Natural Resources
Sask.:—Dept. of Natural Resources
Dept. of Industry and Commerce
Alta.:—Dept. of Lands and Forests
University of Alberta
B.C.:—Dept. of Lands, Forests and Water Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Geological Survey of Canada National Museums of Canada National Film Board	GEOLOGY	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Mines N.B.:—Dept. of Natural Resources Que.:—Dept. of Natural Resources, Geological Surveys Branch Ont.:—Dept. of Mines, Geological Branch Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals University of Alberta B.C.:—Dept. of Mines and Petroleum Resources
Dept. of the Secretary of State (federal-provincial channel of communication) Chief Electoral Office (Electoral Act and voters lists) Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Community Affairs Branch Public Information Adviser Library of Parliament Privy Council Office (appointments, orders in council, statutory orders and regulations) Public Archives (early official records) Public Service Commission (staffing the public service) Queen's Printer (Daily Checklist of Government Publications and distribution and sale of statutory orders and regulations)	GOVERNMENT For Senate and House of Commons of Canada see "Parliament"	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Ont., Man., Sask., B.C.:—Depts. of Provincial Secretary Que.:—Office of Provincial Secretary Alta.:—Dept. of Provincial Secretary and Executive Council
Dept. of National Health and Welfare Queen's Printer (agent for WHO publications) National Film Board Dominion Bureau of Statistics	HEALTH AND MEDICAL INSURANCE	Nfld.:—Dept. of Health, Medical Care Commission P.E.I., Que., Ont.:—Depts. of Health N.S.:—Dept. of Public Health, Medical Care Insurance Commission N.B.:—Dept. of Health and Welfare Man.:—Dept. of Health and Social Services Medical Services Insurance Corporation Sask.:—Dept. of Public Health Saskatchewan Medical Care Commission, Saskatchewan Cancer Commission Alta.:—Dept. of Health B.C.:—Dept. of Health Services and Hospital Insurance, Medical Services Commission
Public Archives Dept. of Indian Affairs and Northern Development Indian and Eskimo Bureau Operations Branch National and Historic Parks Branch Government of the Northwest Territories (Yellowknife, N.W.T.) Dept. of National Defence Directorate of History	HISTORY	Nfld.:—Legislative Library Memorial University Gosling Memorial Library Dept. of Provincial Affairs, Public Archives and Museum P.E.I.:—Travel Bureau, Legislative Library N.S.:—Public Archives, Legislative Library N.B.:—Dept. of Education Legislative Library Que.:—Quebec Archives National Assembly Library Dept. of Cultural Affairs

Sources for Federal Data

Subject

Sources for Provincial Data

National Museums of Canada
 Dept. of Transport
 Marine Services Historian
 Dept. of Veterans Affairs (war
 memorials and war cemeteries)
 National Capital Commission
 Information Services
 National Film Board
 Dominion Bureau of Statistics

HISTORY—concl.

Ont.:—Legislative Library
 Dept. of Tourism and Information,
 Historical Branch
 Dept. of Public Records and
 Archives
 Man.:—Provincial Library and Ar-
 chives
 Sask.:—Legislative Library, Ar-
 chives Division
 Alta.:—Dept. of Provincial Secre-
 tary, Provincial Library, Provin-
 cial Museum and Archives
 B.C.:—Dept. of Provincial Secretary,
 Provincial Librarian and Ar-
 chivist

Dept. of Agriculture
 Production and Marketing Branch
 (grading and inspection)
 Fruit and Vegetable Division
 Plant Products Division
 Plant Protection Division
 Research Branch
 Plant Research Institute
 Queen's Printer (agent for FAO
 publications)

HORTICULTURE

Nfld.:—Dept. of Mines, Agriculture
 and Resources
 P.E.I.:—Dept. of Agriculture
 N.S., N.B., Man., B.C.:—Depts.
 of Agriculture, Horticultural
 Branches
 Que.:—Dept. of Agriculture and
 Colonization, Horticultural
 Branch
 Ont.:—Dept. of Agriculture and
 Food
 Sask.:—Dept. of Agriculture, Plant
 Industry Branch
 Alta.:—Dept. of Agriculture, Plant
 Industry Division

Dept. of National Health and Welfare
 Dept. of Indian Affairs and Northern
 Development
 Dept. of National Defence
 Office of the Surgeon General
 Dept. of Veterans Affairs (veterans
 hospitals)
 Queen's Printer (agent for WHO
 publications)
 Dominion Bureau of Statistics

HOSPITALS
 AND HOSPITAL
 INSURANCE

Nfld.:—Dept. of Health
 P.E.I., Ont.:—Hospital Services
 Commissions
 N.S.:—Hospital Insurance Commis-
 sion
 N.B.:—Dept. of Health and Welfare
 Que.:—Hospital Insurance Service
 Man.:—Manitoba Hospital Com-
 mission, Manitoba Medical Ser-
 vices Insurance Corporation
 Sask., Alta.:—Depts. of Public
 Health
 B.C.:—Dept. of Health Services and
 Hospital Insurance

HOUSE OF
 COMMONS
 See "Parliament"

Central Mortgage and Housing Cor-
 poration (National Housing Act
 financing: loans and subsidies for
 housing)
 Dept. of Indian Affairs and Northern
 Development
 Community Affairs Branch
 Technical Services Branch
 Dept. of Veterans Affairs (home
 construction assistance for vet-
 erans)
 National Research Council
 Division of Building Research
 (construction materials, building
 codes and practices, soil and
 snow mechanics, housing stand-
 ards)
 Dominion Bureau of Statistics

HOUSING

Nfld.:—Newfoundland and Labra-
 dor Housing Corporation
 P.E.I.:—Prince Edward Island Hous-
 ing Authority
 N.S.:—Nova Scotia Housing Com-
 mission
 N.B.:—New Brunswick Housing
 Corporation
 Que.:—Quebec Housing Corporation
 Ont.:—Ontario Housing Corpora-
 tion
 Man.:—Manitoba Housing and Re-
 newal Corporation
 Sask.:—Dept. of Welfare, Housing
 Branch
 Alta.:—Alberta Housing and Urban
 Renewal Corporation
 B.C.:—Dept. of Municipal Affairs,
 Director of Housing and Urban
 Renewal

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Manpower and Immigration Canada Immigration Division Dept. of National Health and Welfare Quarantine, Immigration Medical and Sick Mariners Division Family Allowances, Youth Allow- ances, Old Age Security Divi- sion Dominion Bureau of Statistics	IMMIGRATION	P.E.I.:—Dept. of Industry and Natural Resources Que.:—Dept. of Immigration Ont.:—Dept. of Trade and Develop- ment, Immigration Branch Man.:—Dept. of Industry and Com- merce, Immigration Branch Sask.:—Dept. of Welfare Alta.:—Dept. of Labour B.C.:—British Columbia House, London, England and San Francisco, California
	INCOME TAX See "Taxation"	
Dept. of Consumer and Corporate Affairs Communications Branch Radio-Television Commis-	INCORPORATION OF COMPANIES AND ASSOCIATIONS	Nfld.:—Dept. of Justice, Registry of Justice P.E.I., N.S., N.B., Ont., Sask., Alta.: —Depts. of Provincial Secretary Que.:—Dept. of Financial Institu- tions, Companies and Co-opera- tives Man.:—Office of Provincial Secre- tary, Companies and Business Names Registration Branch B.C.:—Attorney General's Dept. Registrar of Companies
Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of National Health and Welfare (health, hospital services, Indian Health and Northern Health) National Museums of Canada National Film Board	INDIANS	Nfld.:—Dept. of Public Welfare (Indians in Labrador) Dept. of Labrador Affairs Que.:—Dept. of Natural Resources, New Quebec Branch Ont.:—Dept. of Social and Family Services Man.:—Dept. of Health and Social Services, Director of Social Ser- vices Sask.:—Saskatchewan Indian and Metis Department Alta.:—Dept. of Industry and Tour- ism, Community Development Branch B.C.:—Provincial Secretary, Direc- tor, Indian Advisory Act
Dept. of Industry, Trade and Com- merce Industrial Design Council Canada Council Dept. of Consumer and Corporate Affairs Patent and Copyright Office	INDUSTRIAL DESIGN	Ont.:—Dept. of Trade and Develop- ment Man.:—Dept. of Industry and Commerce, Manitoba Design Institute
Dept. of Insurance (Canadian, British and foreign companies, Public Service Insurance) Central Mortgage and Housing Cor- poration (insures loans made under National Housing Act) Dept. of Agriculture (crop insurance) Dept. of Industry, Trade and Com- merce Export Credits Insurance Cor- poration Dept. of Labour Industrial Pensions and Annuities Branch Dept. of National Health and Welfare Canada Pension Plan Dept. of Veterans Affairs Veterans Welfare Services Dominion Bureau of Statistics (sum- mary statistics of all types of insurance)	INSURANCE— LIFE, FIRE, ETC. For Unemployment Insurance see "Labour" and for Hospital Insurance "Hospitals and Hospital Insurance"	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., B.C.:—Super- intendents of Insurance Que.:—Finance Dept., Insurance Branch Ont.:—Dept. of Financial and Com- mercial Affairs, Superintendent of Insurance Man.:—Superintendent of Insurance Manitoba Crop Insurance Cor- poration Sask.:—Superintendent of Insur- ance, Government Insurance Office Alta.:—Dept. of Provincial Secre- tary, Supervisor of Insurance

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Energy, Mines and Resources
Mines Branch
Mineral Resources Branch
Dept. of Industry, Trade and Commerce
Office of Economics
Materials Branch
Dominion Bureau of Statistics

IRON AND STEEL

Nfld.:—Dept. of Mines, Agriculture and Resources
N.S.:—Dept. of Mines Research Foundation
N.B.:—Dept. of Natural Resources
Que.:—Dept. of Industry and Commerce, Bureau of Statistics
Dept. of Natural Resources
Ont.:—Dept. of Trade and Development, Trade and Industry Branch
Man.:—Dept. of Mines and Natural Resources
Dept. of Industry and Commerce
Sask.:—Dept. of Mineral Resources
Dept. of Industry and Commerce
Alta.:—Dept. of Mines and Minerals
Dept. of Industry and Tourism
Research Council of Alberta
B.C.:—Dept. of Mines and Petroleum Resources
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Justice
Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)
Queen's Printer (agent for International Court of Justice publications)
Dominion Bureau of Statistics

JUSTICE

All Provinces except Nfld., N.B. and Que.:—Depts. of Attorney General
Nfld., N.B., Que.:—Depts. of Justice

Dept. of Labour
Canada Labour Relations Board
Conciliation and Arbitration Branch (conciliation of labour disputes)
Economics and Research Branch
Employee Representation Branch (certification of bargaining agents)
Fair Employment Practices Branch (promotion of fair employment practices)
International Labour Affairs Branch
Labour-Management Consultation Branch (promotion of labour-management co-operation)
Labour Standards Branch
Legislation Branch
Library Services Branch
Public Relations and Information Services
Women's Bureau
Canadian Radio-Television Commission
Company of Young Canadians
Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)
Personnel Adviser
Dept. of Manpower and Immigration
Canada Manpower Division
Canada Immigration Division
Dept. of National Health and Welfare (occupational health)
National Research Council
Division of Administration and Personnel (recruitment and salary levels of scientific and technical personnel)
Queen's Printer (agent for International Labour Office publications)
Treasury Board (The Federal Public Service)
Unemployment Insurance Commission
Dominion Bureau of Statistics

LABOUR, WAGES
AND WORKING
CONDITIONS

Nfld., P.E.I., N.S., N.B., Man., Sask., Alta.:—Depts. of Labour
Que.:—Dept. of Labour
Bureau of Statistics
Economic Research Bureau
Ont.:—Dept. of Labour
Dept. of Treasury and Economics
B.C.:—Dept. of Labour
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Surveys and Mapping Branch Dept. of Agriculture Dept. of Indian Affairs and Northern Development Indian Reserve Lands Economic Development Dept. of Manpower and Immigration Canada Immigration Division Dept. of Veterans Affairs Veterans Land Administration Public Archives (early data re settlement)	LANDS AND LAND SETTLEMENT	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Agriculture N.S.:—Dept. of Agriculture, Nova Scotia Farm Loan Board N.B.:—Dept. of Natural Resources Que.:—Dept. of Lands and Forests Dept. of Agriculture and Colonization Ont., Alta.:—Depts. of Lands and Forests Man.:—Dept. of Mines and Natural Resources, Lands Branch Sask.:—Dept. of Agriculture, Lands Branch Attorney General, Land Titles B.C.:—Dept. of Lands, Forests, and Water Resources
Dept. of Justice General Royal Canadian Mounted Police Enforces Federal Statutes in all parts of Canada; in the provinces, exclusive of Quebec and Ontario, it carries out, under contract, enforcement of the Criminal Code and Provincial Statutes and polices a number of municipalities; is the only law-enforcement body in the Y.T. and N.W.T.	LAW ENFORCEMENT	All Provinces except Nfld. and Que.:—Depts. of Attorney General Nfld., Que.:—Depts. of Justice
Library of Parliament Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) Dept. of Justice Privy Council Office Queen's Printer (Daily Checklist of Government Publications, distribution and sale of the Statutes of Canada and texts of federal legislation)	LEGISLATION For Statutory Orders and Regulations see "Government"	(All Provinces except Nfld., P.E.I., Man., and B.C.:—Depts. of Attorney General Additional:—N.S., Ont. and Alta.:—Queen's Printer (distribution and sale of the Statutes and various Acts) Nfld.:—Dept. of Justice P.E.I., B.C.:—Depts. of Provincial Secretary Man.:—Legislative Council
	LIBRARIES See "Bibliography"	
Chief Electoral Office (for local referendum under Canada Temperance Act) Dept. of Indian Affairs and Northern Development Indian-Eskimo Bureau Operations Branch Dominion Bureau of Statistics	LIQUOR CONTROL	Nfld.:—Board of Liquor Control P.E.I., Man.:—Liquor Control Commissions N.S.:—Liquor Commission, Liquor Licence Board N.B., Ont., Alta., B.C.:—Liquor Control Boards Que.:—Liquor Board Sask.:—Liquor Board, Liquor Licensing Commission
Dept. of Agriculture Production and Marketing Branch Livestock Division Health of Animals Branch Contagious Diseases Division Meat Inspection Division Animal Pathology Division Research Branch Animal Research Institute Queen's Printer (agent for FAO publications) National Film Board Dominion Bureau of Statistics	LIVESTOCK	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I., N.B., Alta., B.C.:—Depts. of Agriculture, Livestock Branches N.S.:—Dept. of Agriculture, Animal Husbandry Branch Que.:—Dept. of Agriculture and Colonization, Animal Products Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture and Food, Livestock Branch Man., Sask.:—Dept. of Agriculture, Animal Industry Branch

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Industry, Trade and Commerce
Information and Promotion Branch
Office of the Design Adviser
Office of the Industrial Policy Adviser
Bank of Canada
Industrial Development Bank
Dept. of Consumer and Corporate Affairs
Corporations Branch
Dept. of Finance (Small Businesses Loans Act)
National Research Council
Canadian Patents and Development Limited (utilization of new scientific processes)
Technical Information Service (answering queries from industry on problems of technology and productivity)
National Film Board
Dominion Bureau of Statistics

MANUFACTURING
See also "Crown Corporations"

Nfld.:—Dept. of Community and Social Development
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Dept. of Trade and Industry
N.B.:—Dept. of Economic Growth
Que.:—Dept. of Industry and Commerce, Bureau of Statistics
Ont.:—Dept. of Trade and Development, Trade and Industry Division
Man.:—Dept. of Industry and Commerce
Sask.:—Economic Development Board
Dept. of Industry and Commerce
Alta.:—Dept. of Industry and Tourism
Alberta Bureau of Statistics
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dept. of Energy, Mines and Resources
Surveys and Mapping Branch
Marine Sciences Branch
Geological Survey
Observatories Branch
Dept. of Agriculture (soil survey and economic survey maps)
Dept. of Fisheries and Forestry
Information and Consumer Service (fisheries and forestry maps)
Dept. of Transport (meteorological maps)
National Capital Commission (tourist and planning maps)
National Research Council
Division of Building Research (Climatological Atlas)
Public Archives (maps relating to history and cartography)
Dominion Bureau of Statistics (economic and census maps)

MAPS AND CHARTS

Nfld.:—Dept. of Mines, Agriculture and Resources
P.E.I.:—Dept. of Public Works and Highways
N.S.:—Dept. of Mines Research Foundation
N.B.:—Dept. of Natural Resources
Dept. of Economic Growth
Que.:—Dept. of Lands and Forests
Dept. of Natural Resources
Dept. of Industry and Commerce, Economic Cartography
Dept. of Agriculture and Colonization, Planning Branch
Ont.:—Dept. of Mines
Dept. of Lands and Forests
Dept. of Highways
Dept. of Tourism and Information
Man.:—Dept. of Mines and Natural Resources, Surveys Branch
Sask.:—Dept. of Natural Resources
Dept. of Industry and Commerce
Alta.:—Dept. of Lands and Forests
Alberta Travel Bureau
Dept. of Highways, Surveys Branch
B.C.:—Dept. of Lands, Forests, and Water Resources

MARRIAGES
See "Vital Statistics"

Dept. of Industry, Trade and Commerce
Market Analysis Division
Publicity Branch
Industry, Trade and Traffic Services Branch
Dept. of Agriculture
Economics Branch
Dept. of Consumer and Corporate Affairs
Bureau of Consumer Affairs
Dominion Bureau of Statistics

MERCHANDISING

P.E.I.:—Dept. of Provincial Secretary
Ont.:—Dept. of Trade and Development
Man., Sask.:—Depts. of Industry and Commerce
Alta.:—Dept. of Industry and Tourism
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Energy, Mines and Resources
Mines Branch
Mineral Resources Branch
Dept. of Industry, Trade and Commerce
Materials Branch
Office of Economics
Dominion Bureau of Statistics (for production data)

METALS
See also
"Iron and Steel"

Nfld.:—Dept. of Mines, Agriculture and Resources
N.S., Ont.:—Depts. of Mines
N.B., Que.:—Depts. of Natural Resources
Man.:—Dept. of Mines and Natural Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Dept. of Industry and Commerce
Alta.:—Dept. of Mines and Minerals
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Mines and Petroleum Resources

Dept. of Energy, Mines and Resources
Geological Survey of Canada
Mineral Resources Branch
Dept. of Indian Affairs and Northern Development
Northern Economic Development Branch
Dept. of Industry, Trade and Commerce
Mineral Branch
National Museums of Canada
Dominion Bureau of Statistics (for production data)

MINING AND MINERALS

Nfld.:—Dept. of Mines, Agriculture and Resources
P.E.I.:—Dept. of Industry and Natural Resources
N.S., Ont.:—Depts. of Mines
N.B., Que.:—Depts. of Natural Resources
Man.:—Dept. of Mines and Natural Resources, Mines Branch
Sask.:—Dept. of Mineral Resources
Alta.:—Dept. of Mines and Minerals
B.C.:—Dept. of Mines and Petroleum Resources

National Film Board
(Produces documentary films and short subjects for theatrical, non-theatrical and television distribution; filmstrips, slides and photographs. Production available to the public through local and provincial film libraries, 5 NFB regional libraries and several district offices.)
Canadian Broadcasting Corporation
Canadian Film Development Corporation (to foster and promote the development of a feature film industry in Canada)
Canadian Radio-Television Commission
Central Mortgage and Housing Corporation (library of films on housing and urban renewal)
Dept. of Fisheries and Forestry
Information and Consumer Service
Lending library of forestry training and resource films)
Dept. of Labour
Public Relations and Information Services (sponsors film lending library on labour matters operated by Canadian Film Institute)
National Capital Commission
Information Services
National Museums of Canada
National Gallery of Canada (library of films on art)

MOTION PICTURES

Nfld., P.E.I., N.B.:—Purchase films but do not produce them
N.S., Que., Alta., B.C.:—Produce educational or informational films
Ont.:—Dept. of Tourism and Information, Theatres Branch and Photography Branch (Films are available to the public from several other departments.)
Man.:—Dept. of Government Services
Dept. of Youth and Education
Dept. of Agriculture
Sask.:—Dept. of Industry and Commerce
Dept. of Education, Visual Education Branch
Alta.:—Dept. of Industry and Tourism, Film and Photographic Branch
B.C.:—Dept. of Recreation and Conservation
(All provinces have Motion Picture Censorship Boards. Details available from: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.)

Dominion Bureau of Statistics
Governments Division
Dept. of Finance (municipal grants)
Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)
Community Affairs Branch

MUNICIPAL AFFAIRS

Nfld.:—Dept. of Municipal Affairs and Supply
P.E.I., N.S., N.B., Que., Ont., Man., Sask., Alta., B.C.:—Depts. of Municipal Affairs

Sources for Federal Data	Subject	Sources for Provincial Data
<p>National Museums of Canada Museum of Natural Sciences Museum of Man Museum of Science and Technology National Gallery of Canada (works of art) National Historic Parks Museums Public Archives (historical) Laurier House, Ottawa (historical) Queen's Printer (agent for UNESCO publications)</p>	MUSEUMS	<p>Nfld.:—Dept. of Provincial Affairs N.S.:—Nova Scotia Museum of Fine Arts, Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax N.B.:—New Brunswick Museum, Saint John Que.:—The Archives, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal Dept. of Cultural Affairs Ont.:—Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions Dept. of Public Records and Archives Man.:—Manitoba Museum of Man and Nature Sask.:—Provincial Museum, Regina Western Development Museum, Saskatoon Alta.:—Dept. of Provincial Secretary, Provincial Museum, Edmonton B.C.:—Provincial Museum of Natural History and Anthropology, Provincial Archives (including Helmcken House), Victoria Also provincial universities of Sask., Alta. and B.C.</p>
<p>Dominion Bureau of Statistics</p>	NATIONAL ACCOUNTS	
<p>Dept. of Transport Marine Services (aids to marine navigation; secondary canals) Information Services Canadian Transport Commission Dept. of Communications (radio aids to navigation) Dept. of Energy, Mines and Resources Canadian Hydrographic Service Dept. of Public Works Information Services (dredging and marine construction) National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)</p>	NAVIGATION	
<p>Dept. of National Health and Welfare Nutrition Division Company of Young Canadians Dept. of Agriculture Consumer Service Dept. of Fisheries and Forestry Information and Consumer Service Dept. of Industry, Trade and Commerce Agriculture, Fisheries and Food Branch Queen's Printer (agent for FAO and WHO publications)</p>	NUTRITION	<p>Nfld., P.E.I., Que.:—Depts. of Health N.S., Sask.:—Depts. of Public Health, Nutrition Division N.B.:—Dept. of Health and Welfare Ont.:—Dept. of Health, Nutrition Service Dept. of Agriculture and Food, Home Economics Service Man.:—Dept. of Health and Social Services, Health Education Services Alta.:—Dept. of Agriculture Dept. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance</p>

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Energy, Mines and Resources Marine Sciences Branch Dept. of Fisheries and Forestry Dept. of National Defence Defence Research Board Research Board of Canada Museums of Canada	OCEANOGRAPHY	Nfld.:—Dept. of Mines, Agriculture and Resources Que.:—Dept. of Tourism, Game and Fish Marine Biological Station of Grande Rivière Fisheries Training School B.C.:—Institute of Oceanography, University of British Columbia
Dept. of Energy, Mines and Resources Energy Development Group Geological Survey of Canada Indian Affairs and Northern Development Branch (Indian reserves) Northern Economic Development Industry, Trade and Commerce National Energy Board Dominion Bureau of Statistics	OIL AND NATURAL GAS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Attorney General N.S.:—Dept. of Mines N.B.:—Dept. of Natural Resources Que.:—Electricity and Gas Board Ont.:—Dept. of Energy and Resources Management Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Saskatchewan Power Corporation Dept. of Industry and Commerce Alta.:—Dept. of Mines and Minerals, Oil and Gas Conservation Board, Calgary or Edmonton Alberta Bureau of Statistics B.C.:—Dept. of Mines and Petroleum Resources
Dept. of National Health and Welfare Dept. of Veterans Affairs (veterans only)	OLD AGE ASSISTANCE See also "Veterans Affairs"	Nfld., N.S.:—Depts. of Public Welfare P.E.I.:—Dept. of Welfare N.B.:—Dept. of Health and Welfare Que.:—Dept. of Family and Social Welfare, Social Allowances Commission Ont.:—Dept. of Social and Family Services, Family Benefits Branch Man.:—Dept. of Health and Social Services Sask.:—Dept. of Welfare, Director of Public Assistance Alta.:—Dept. of Public Welfare B.C.:—Dept. of Social Welfare, Division on Aging Y.T.:—Dept. of Welfare (Director) N.W.T.:—Dept. of Social Development (Director)
Dept. of National Health and Welfare	OLD AGE SECURITY AND GUARANTEED INCOME SUPPLEMENT	
Dept. of Indian Affairs and Northern Development National and Historic Parks Branch Dept. of Public Works Information Services (highway construction and development)	PARKS	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Tourist Development N.S., Alta.:—Depts. of Lands and Forests N.B., Sask.:—Depts. of Natural Resources Que.:—Dept. of Tourism, Game and Fish

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Regional Economic Expansion (land use projects under ARDA) National Capital Commission (urban parks and Gattineau Park) National Film Board	PARKS—concluded	Ont.:—Dept. of Lands and Forests, Parks Branch Dept. of Energy and Resources Management, Conservation Branch Man.:—Dept. of Tourism and Recreation, Parks Branch B.C.:—Dept. of Recreation and Conservation
Library of Parliament Privy Council Office Queen's Printer (Daily Checklist of Government Publications)	PARLIAMENT	Nfld.:—Dept. of Provincial Affairs P.E.I., N.B., Sask., Alta., B.C.:—Legislative Assemblies N.S.:—House of Assembly Que.:—National Assembly Ont.:—Legislative Assembly Clerk of the Legislative Assembly Man.:—Legislative Council
Dept. of External Affairs Passport Division	PASSPORTS	
Dept. of Consumer and Corporate Affairs Patent and Copyright Office Trade Marks Office Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) National Library (handles all copyright books)	PATENTS, COPY-RIGHTS AND TRADE MARKS	
Dept. of National Health and Welfare Research and Statistics Directorate Canadian Pension Commission (pensions to or in respect of veterans) Dept. of Insurance (Pension Benefits Standards Act) Dept. of National Revenue Dominion Bureau of Statistics (private pension plan statistics)	PENSIONS	Nfld., P.E.I., N.S., N.B., Man. and B.C.:—Legislation governing private pension plans Que.:—Quebec Pension Board Ont.:—Ontario Pension Commission Sask., Alta.:—Superintendent of Pensions
National Film Board Central Mortgage and Housing Corporation Information Division Dept. of Energy, Mines and Resources Public Relations and Information Services Mineral Economics Division National Air Photographic Library Dept. of Fisheries and Forestry Information and Consumer Service Dept. of Indian Affairs and Northern Development Public Information Adviser Dept. of Industry, Trade and Commerce Office of Tourism National Capital Commission Information Services (related to the development of the National Capital) National Museums of Canada Public Archives (historical)	PHOTOGRAPHIC MATERIAL See also "Motion Pictures" and "Tourist Trade"	Nfld.:—Dept. of Community and Social Development N.S.:—Dept. of Trade and Industry Man.:—Dept. of Government Services Sask.:—Dept. of Industry and Commerce Alta.:—Dept. of Industry and Tourism, Film and Photographic Branch B.C.:—Dept. of Travel Industry, Photographic Branch (Photographs are available from many provincial government departments in all provinces.)

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics (for all census and estimated population statistics) Dept. of Indian Affairs and Northern Development Statistics Branch Census and Statistics Commission Statistics of Capital Region Statistics) Public Archives (early census and settlement records)	POPULATION	Nfld.:—Dept. of Health P.E.I.:—Travel Bureau N.S.:—Dept. of Public Health, Vital Statistics Branch N.B.:—Dept. of Health, Vital Statistics Branch Que.:—Dept. of Health, Vital Statistics Branch Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Treasury and Economics Man.:—Dept. of Industry and Commerce Dept. of Municipal Affairs Dept. of Finance, Economic Research Branch Dept. of Health and Social Services, Vital Statistics Division Sask.:—Dept. of Public Health, Vital Statistics Division Legislative Library Alta.:—Dept. of Industry and Tourism, Provincial Statistician B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Post Office Department Information and Public Relations (general postal information) Accounting Branch (money orders, postal telegrams, etc.) Postal Rates and Classification Branch (postal rates, etc.) Parcel Post Branch (all postal parcels sent and not under contract) Transporting and Transportation) Transportation Branch (carriage of mail)	POSTAL SERVICE	
Dept. of Agriculture Production and Marketing Branch Poultry Division Poultry and Animals Branch Poultry Diseases Division Poultry Inspection Division Poultry Marketing Division Poultry Institute Poultry and Trade and Marketing Agriculture, Fisheries and Food Poultry Market Board for FAO Poultry Marketing Poultry Marketing Statistics	POULTRY	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I., N.S.:—Depts. of Agriculture N.B., Alta.:—Depts. of Agriculture, Poultry Branches Que.:—Dept. of Agriculture and Colonization, Animal Production Service Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Ontario Agricultural College (Guelph), Poultry Division Man.:—Dept. of Agriculture, Animal Industry Branch Sask.:—Dept. of Agriculture, Animal Industry Branch B.C.:—Dept. of Agriculture, Poultry Division
Dept. of Secretary of State State Ceremonial and Protocol	PRECEDENCE AND CEREMONIAL	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Ont., B.C.:—Depts. of Provincial Secretary Que.:—Executive Council, Chief of Protocol Man., Alta.:—Clerk of the Executive Council
Dominion Bureau of Statistics Dept. of Agriculture Production and Marketing Branch Markets Information Agricultural Stabilization Board Fisheries Prices Support Board Queen's Printer (agent for GATT publications)	PRICES	Que.:—Bureau of Statistics Ont.:—Dept. of Treasury and Economics Man.:—Dept. of Industry and Commerce Sask.:—Economic Development Board B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Consumer and Corporate Affairs Registration Branch Public Archives (early records) Queen's Printer (Daily Checklist of Government Publications)	PUBLIC DOCUMENTS (Commissions of Appointment, Proclamations, Land Grants, etc.)	<i>Nfld.</i> :—Dept. of Provincial Affairs Dept. of Mines, Agriculture and Resources <i>P.E.I., N.S., N.B., Que., Ont., Man., Sask., Alta., B.C.</i> :—Depts. of Provincial Secretary
Dept. of Energy, Mines and Resources Energy Development Group Dominion Bureau of Statistics	PUBLIC UTILITIES See also "Electric Power"	<i>Nfld.</i> :—Board of Public Utilities Commissioners <i>P.E.I., B.C.</i> :—Public Utilities Commissions <i>N.S., N.B.</i> :—Boards of Commissioners Public Utilities <i>Que.</i> :—Public Service Board Quebec Hydro-Electric Commission <i>Ont.</i> :—Dept. of Energy and Resources Management The Hydro-Electric Power Commission of Ontario Ontario Telephone Service Commission Ontario Water Resources Commission Ontario Municipal Board <i>Man.</i> :—Dept. of Finance <i>Sask.</i> :—Government Finance Office Saskatchewan Government Telephones Saskatchewan Power Corporation <i>Alta.</i> :—Dept. of Municipal Affairs, Public Utilities Board
Dept. of Public Works Information Services Dept. of Labour Labour Standards Branch (wages, hours, vacations, general holidays) Public Relations and Information Services Dept. of Transport Marine and Air Services St. Lawrence Seaway Authority	PUBLIC WORKS	<i>All Provinces except Man.</i> :—Depts. of Public Works <i>Additional:—Ont.</i> :—The Hydro-Electric Power Commission of Ontario Ontario Water Resources Commission <i>Man.</i> :—Dept. of Government Services
Queen's Printer (publications issued by Parliament and Government Agencies)	PUBLICATIONS	
Dept. of Indian Affairs and Northern Development Public Information Services National and Historic Parks Branch Dept. of National Health and Welfare Fitness and Amateur Sport Directorate National Capital Commission Information Services National Gallery of Canada National Film Board	RECREATION See also "Health"	<i>Nfld.</i> :—Dept. of Provincial Affairs Dept. of Mines, Agriculture and Resources <i>P.E.I., Ont.</i> :—Depts. of Education <i>N.S.</i> :—Youth Commission <i>N.B.</i> :—Dept. of Youth Dept. of Natural Resources, Travel Bureau <i>Que.</i> :—Dept. of Tourism, Fish and Game <i>Man.</i> :—Dept. of Tourism and Recreation <i>Sask.</i> :—Dept. of Industry and Commerce, Tourist Development Branch Dept. of Education <i>Alta.</i> :—Dept. of Youth, Recreation Branch <i>B.C.</i> :—Dept. of Recreation and Conservation

Sources for Federal DataSubjectSources for Provincial DataREHABILITATION
(of persons)

- Nfld.:—Dept. of Health, Provincial Co-ordinator of Rehabilitation
 P.E.I.:—Dept. of Welfare
 N.S.:—Dept. of Public Welfare, Provincial Rehabilitation Co-ordinator
 N.B.:—Dept. of Health and Welfare, Director and Co-ordinator of Rehabilitation
 Que.:—Dept. of Family and Social Welfare
 Dept. of Education, Service for the Vocational Rehabilitation of the Handicapped
 Dept. of Labour, Workmen's Compensation Commission
 Dept. of Health
 Ont.:—Dept. of Social and Family Services
 Dept. of Health, Rehabilitation Division
 Dept. of Reform Institutions
 Man.:—Dept. of Health and Social Services
 Sask.:—Dept. of Welfare, Provincial Co-ordinator of Rehabilitation
 Alta.:—Dept. of Public Welfare, Provincial Co-ordinator of Rehabilitation
 B.C.:—Dept. of Health Services and Hospital Insurance, Rehabilitation Co-ordinator

RESOURCE
DEVELOPMENT

- Nfld.:—Dept. of Community and Social Development
 Dept. of Mines, Agriculture and Resources
 P.E.I.:—Dept. of Industry and Natural Resources
 N.S.:—Dept. of Trade and Industry
 N.B.:—Dept. of Economic Growth
 Que.:—Depts. of Lands and Forests, Labour, Roads, Family and Social Welfare, Natural Resources, and Industry and Commerce
 Ont.:—Dept. of Treasury and Economics
 Dept. of Energy and Resources Management
 Dept. of Lands and Forests
 Ontario - St. Lawrence Development Commission
 Dept. of Municipal Affairs, Community Planning Branch
 Ontario Northland Transportation Commission, North Bay
 Man.:—Dept. of Mines and Natural Resources
 Dept. of Industry and Commerce
 Sask.:—Dept. of Industry and Commerce, Resource Development Branch
 Alta.:—Dept. of Industry and Tourism
 B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data

Subject

Sources for Provincial Data

National Research Council
Laboratory Divisions (biology, biochemistry and molecular biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering)
Regional Laboratories at Saskatoon, Sask., and Halifax, N.S.
Science Council of Canada
Science Secretariat, Privy Council Office
Atomic Energy of Canada Limited, Chalk River, Ont.
Canadian Patents and Development Limited (licences available on patents derived from government research, etc.)
Canadian Transport Commission Research Division
Dept. of Agriculture
Research Branch (basic and applied research on all aspects of agriculture)
Dept. of Energy, Mines and Resources
Geological Survey of Canada
Mines Branch
Observatories Branch
Marine Sciences Branch
Inland Waters Branch
Dept. of Fisheries and Forestry
Information and Consumer Service
Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch
Northern Science Research Group
Canadian Wildlife Service
Dept. of Industry, Trade and Commerce
Office of Scientific and Technological Adviser
Dept. of National Defence
Defence Research Board
Dept. of National Health and Welfare
Dept. of Public Works
Testing Laboratories
Information Services
Dept. of Transport (aviation, radio, meteorology, navigation)
Dept. of Veterans Affairs (medical research)
Fisheries Research Board of Canada
Medical Research Council (fellowships, associateships and grants-in-aid)
National Museums of Canada
National Gallery of Canada (conservation research laboratory)
Queen's Printer (agency for International Atomic Energy Agency publications)
Dominion Bureau of Statistics

SCIENTIFIC
RESEARCH

See also
"Atomic
Energy"

Nfld.:—Dept. of Community and Social Development
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Nova Scotia Research Foundation
N.B.:—Dept. of Finance and Industry
Que.:—Dept. of Agriculture and Colonization
Dept. of Natural Resources
Dept. of Health
Dept. of Roads
Ont.:—Ontario Research Foundation
Dept. of Agriculture and Food
Dept. of Lands and Forests
Alcoholism and Drug Addiction Research Foundation of Ontario
The Hydro-Electric Power Commission of Ontario
Sheridan Park Research Community
Man.:—Dept. of Mines and Natural Resources
Dept. of Health and Social Services
Manitoba Research Council
Sask.:—Saskatchewan Research Council
Alta.:—Alberta Research Council
B.C.:—Dept. of Industrial Development, Trade, and Commerce, B.C. Research Council

SENATE
See "Parliament"

Sources for Federal DataSubjectSources for Provincial DataSOCIAL
SECURITY

See

"Family
and Youth
Allowances"
"Blindness
Allowances"
"Old Age
Assistance"
"Old Age
Security and
Guaranteed
Income
Supplement"
"Disabled Persons
Allowances"
"Labour"
"Pensions"
"Unemployment"
"Veterans Affairs"
"Economic and
Social Research"

SOCIAL WELFARE

See "Welfare"

Dept. of Consumer and Corporate
Affairs

inquiries on electricity and gas
weights and mea-
sures precious metals marking,
quality standards and na-
tional trade mark and true label-
ling matters)

Radio-Television Commis-

Canadian Standards Association

Mortgage and Housing
Corporation (building standards)

Dept. of Labour

Labour Standards Branch (wages,
hours, vacations, general holi-Public Relations and Information
Services

Dept. of National Defence

Dept. of Supply and Services

Dept. of Transport (standards in
steamship inspection)

National Research Council

Applied Physics Division (funda-
mental physical and electrical
standards)STANDARDS
AND
SPECIFICATIONS

See also

"Food and
Drugs"

Ont.:—Dept. of Labour
Ontario Research Foundation
Ontario Housing Corporation
Man., Alta.:—Dept. of Labour

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics Central Mortgage and Housing Corporation Dept. of Labour Economic and Research Branch Public Relations and Information Services Dept. of National Health and Welfare Research and Statistics Directorate Queen's Printer (agent for United Nations publications)	STATISTICS	Nfld.:—Dept. of Provincial Affairs Dept. of Community and Social Development N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Education Dept. of Health and Welfare Que.:—Dept. of Industry and Commerce, Bureau of Statistics Ont.:—Dept. of Treasury and Economics Dept. of Trade and Development Man.:—Dept. of Industry and Commerce, Economic, Business and Transportation Research Dept. of Labour Sask.:—Economic Development Board Dept. of Industry and Commerce Alta.:—Dept. of Industry and Tourism, Bureau of Statistics Dept. of Public Health, Vital Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of National Revenue, Taxation (income tax and estate tax statistics and information) Dept. of National Revenue, Customs and Excise (customs duty, excise duty, excise tax and sales tax) Dept. of Finance (taxation policy, tariff policy, Budget papers and statistics)	TAXATION	Nfld., Que.:—Depts. of Finance P.E.I.:—Provincial Treasurer N.S.:—Dept. of Finance and Economics N.B.:—Dept. of Provincial Secretary Dept. of Finance Ont.:—Dept. of Revenue Man.:—Dept. of Finance Sask.:—Provincial Treasury Dept. Alta.:—Provincial Treasurer's Dept. Dept. of Municipal Affairs B.C.:—Dept. of Finance, Surveyor of Taxes
Dept. of Energy, Mines and Resources Topographical Survey National Research Council Applied Physics Division (photogrammetric research)	TOPOGRAPHY	Nfld.:—Dept. of Mines, Agriculture and Resources N.S.:—Dept. of Mines Nova Scotia Research Foundation N.B., Sask.:—Depts. of Natural Resources Que.:—Dept. of Lands and Forests Dept. of Industry and Commerce, Drafting Division Dept. of Natural Resources Ont.:—Dept. of Lands and Forests, Lands and Surveys Branch Man.:—Dept. of Mines and Natural Resources, Surveys Branch Alta., B.C.:—Depts. of Lands and Forests
Dept. of Industry, Trade and Commerce Office of Tourism Canadian Government Exhibition Commission (displays) Dept. of Indian Affairs and Northern Development Canadian Wildlife Service Northwest Territories Tourist Office National and Historic Parks Branch National Capital Commission Information Services Economic Development National Gallery of Canada National Film Board Dominion Bureau of Statistics	TOURIST TRADE	Nfld.:—Dept. of Community and Social Development, Tourist Development Division P.E.I.:—Dept. of Tourist Development N.S.:—Dept. of Trade and Industry, Travel Bureau N.B.:—Dept. of Natural Resources, Travel Bureau Que.:—Dept. of Tourism, Game and Fish Ont.:—Dept. of Tourism and Information Man.:—Dept. of Tourism and Recreation Sask.:—Dept. of Industry and Commerce, Tourist Development Branch Alta.:—Dept. of Industry and Tourism, Alberta Travel Bureau B.C.:—Dept. of Recreation and Conservation Dept. of Travel Industry

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Industry, Trade and Commerce</p> <p>Insurance Corporation of Canada</p> <p>Government Exhibition</p> <p>Board of Trade and Corporate Affairs</p> <p>Public Relations Service</p> <p>Affairs Division (tariff matters)</p> <p>Fisheries and Forestry</p> <p>Consumer Service</p> <p>Agent for OECD (Communications)</p> <p>Board of Trade</p> <p>Bureau of Statistics</p>	TRADE	<p>For incorporation of companies under provincial law, address Provincial Secretaries except Nfld., where Dept. of Justice is the authority, Que., where Dept. of Financial Institutions, Companies and Co-operatives is responsible, and B.C., where Attorney General's Dept. is the authority</p> <p>P.E.I.:—Dept. of Industry and Natural Resources</p> <p>N.S.:—Dept. of Trade and Industry</p> <p>N.B.:—Dept. of Economic Growth</p> <p>Que.:—Dept. of Industry and Commerce</p> <p>Ont.:—Dept. of Trade and Development, Trade and Industry Division</p> <p>Treasury Dept., Finance and Economics Division</p> <p>Man.:—Dept. of Industry and Commerce, Manitoba Export Corporation</p> <p>Sask.:—Dept. of Industry and Commerce, Area and Trade Development</p> <p>Alta.:—Dept. of Industry and Tourism</p> <p>B.C.:—Dept. of Industrial Development, Trade, and Commerce</p>
<p>Dept. of Manpower and Immigration</p> <p>Manpower Centres</p> <p>Support Branch</p> <p>Young Canadians</p> <p>Commission</p> <p>Staff Development and Training</p>	TRAINING	<p>Que.:—Dept. of Labour</p> <p>Dept. of Education</p> <p>Man.:—Dept. of Youth and Education</p> <p>Dept. of Labour, Apprenticeship Division</p> <p>Dept. of Industry and Commerce, Immigration and Training Branch</p>
<p>Office of the Secretary of State</p> <p>Bureau</p> <p>Research Council</p> <p>Reference Library (information on completion of translations in Canada, and in the countries of the Commonwealth and the United States)</p>	TRANSLATIONS	<p>N.B.:—Dept. of Provincial Secretary</p> <p>Que.:—National Assembly Bureau for Translations and all departments of the Quebec administration.</p>
<p>Dept. of Transport</p> <p>Commission</p> <p>Regulations re railways; highway</p> <p>Rates of railways, companies and certain water carriers; rates re communications, international and tunnels; licences to inland carriers; commercial air services)</p> <p>Dept. of Indian Affairs and Northern Development</p> <p>Technical Services Branch</p> <p>National and Historic Parks Branch (highways in National Parks)</p> <p>Dept. of Industry, Trade and Commerce</p> <p>Aerospace, Marine and Rail Branch</p> <p>Publicity Branch</p> <p>Mechanical Transport Branch</p>	TRANSPORTATION	<p>Nfld.:—Dept. of Highways</p> <p>P.E.I.:—Dept. of Public Works</p> <p>N.S.:—Dept. of Highways</p> <p>Board of Commissioners of Public Utilities</p> <p>N.B.:—Dept. of Highways</p> <p>Dept. of Provincial Secretary</p> <p>Que.:—Dept. of Transportation and Communications</p> <p>Dept. of Roads</p> <p>Ont.:—Dept. of Transport</p> <p>Dept. of Highways</p> <p>Dept. of Treasury and Economics</p> <p>Ontario Northland Transportation Commission, North Bay</p> <p>Man.:—Dept. of Transportation</p> <p>Dept. of Industry and Commerce, Transportation Research Branch</p> <p>Dept. of Public Utilities</p> <p>Dept. of Industry and Commerce</p>

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Labour Conciliation and Arbitration Branch Economics and Research Branch Public Relations and Information Services</p> <p>Dept. of Public Works Information Services (Trans-Canada Highway and Northwest Highway System)</p> <p>National Harbours Board National Museums of Canada Northern Transportation Company Limited (Crown)</p> <p>Queen's Printer (agent for ICAO publications)</p> <p>St. Lawrence Seaway Authority National Film Board Dominion Bureau of Statistics</p>	<p>TRANSPORTATION— concluded</p>	<p>Sask.:—Dept. of Highways and Transportation Saskatchewan Transportation Company Economic Development Board</p> <p>Alta.:—Dept. of Highways Highway Traffic Board Alberta Freight Bureau</p> <p>B.C.:—Dept. of Commercial Transport Dept. of Highways</p>
<p>Dept. of Indian Affairs and Northern Development Economic Development Program National and Historic Parks Branch</p> <p>Dominion Bureau of Statistics</p>	<p>TRAPPING <i>See also</i> "Fur Farming"</p>	<p>Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Natural Resources Que.:—Dept. of Tourism, Game and Fish Man.:—Dept. of Mines and Natural Resources, Wildlife Branch Sask.:—Dept. of Natural Resources, Fur Marketing Service B.C.:—Dept. of Recreation and Conservation</p>
<p>Dept. of Labour Economics and Research Branch Queen's Printer (agent for ILO publications)</p> <p>Unemployment Insurance Commission</p> <p>Dominion Bureau of Statistics</p>	<p>UNEMPLOYMENT</p>	<p>Nfld., N.S., Que., Sask., Alta.:—Depts. of Labour N.B.:—Office of the Economic Adviser Ont.:—Dept. of Treasury and Economics Dept. of Public Welfare Man.:—Dept. of Labour, Research Branch B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Labour</p>
<p>Unemployment Insurance Commission</p> <p>Dept. of Manpower and Immigration Canada Manpower Division (occupational training for adults, manpower mobility)</p> <p>Dept. of National Health and Welfare</p>	<p>UNEMPLOYMENT ASSISTANCE</p>	<p>Nfld., N.S., Alta.:—Depts. of Public Welfare P.E.I., Sask.:—Depts. of Welfare N.B.:—Dept. of Health and Welfare Que.:—Dept. of Family and Social Welfare Ont.:—Dept. of Social and Family Services Man.:—Dept. of Health and Social Services B.C.:—Dept. of Social Welfare Y.T.:—Dept. of Welfare (Director) N.W.T.:—Dept. of Social Development (Director)</p>
<p>Central Mortgage and Housing Corporation Company of Young Canadians National Capital Commission</p>	<p>URBAN RENEWAL</p>	<p>Nfld.:—Dept. of Municipal Affairs and Supply N.S., Alta., B.C.:—Depts. of Municipal Affairs Que.:—Dept. of Municipal Affairs, Industry Branch Planning Bureau Ont.:—Ontario Housing Corporation Man.:—The Manitoba Housing and Renewal Corporation Manitoba Housing Commission Sask.:—Dept. of Municipal Affairs, Housing and Urban Renewal Branch</p>

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Veterans Affairs (general information, rehabilitation, welfare allowances, training, treatment, land settlement, education of children of war dead, insurance, records of service, war medals and remembrance)

Commission (the)
Civilian War
Allowances Act,
(Veterans business
loans)

Affairs and Northern
(immigration)

and Welfare
Board (the)
Allowance Act,
War Pensions and
Act, Part XI)

VETERANS AFFAIRS

P.E.I.:—Dept. of Welfare
N.S.:—Dept. of Public Welfare
N.B.:—Dept. of Youth
Que.:—Dept. of Family and Social
Welfare
Ont.:—Dept. of Social and Family
Services, Soldiers Aid Commis-
sion
Sask.:—Dept. of Welfare, Rehabili-
tation Division
B.C.:—Dept. of Provincial Secretary

Union Bureau of Statistics
 Dept. of Public Affairs and Northern
 Development
 1000-101 Avenue
 Ottawa, Ontario K1A 0S6
 Telephone: (613) 993-2222 (Research Branch
 (416-222-2222))
 Fax: (613) 993-2222 and Immigration
 and Naturalization Division
 (for records of early census records)

VITAL STATISTICS

Nfld., N.B.:—Depts. of Health
P.E.I.:—Dept. of Health, Director
of Vital Statistics
N.S.:—Dept. of Public Health,
Registration Services
Que.:—Dept. of Health
Bureau of Statistics
Ont.:—Dept. of Provincial Sec-
retary and Citizenship, Office of
the Registrar-General
Man.:—Dept. of Health and Social
Services, Vital Statistics Division
Sask.:—Dept. of Public Health,
Vital Statistics Division
Alta.:—Dept. of Public Health,
Director of Vital Statistics
B.C.:—Dept. of Health Services and
Hospital Insurance, Vital Statis-
tics Division

Department of Energy, Mines and Re-
sources
Branch
Planning Branch
Telephone
and Forestry
Consumer Service
1980

WATER
RESOURCES

Nfld.:—Dept. of Mines, Agriculture
and Resources
P.E.I.:—Prince Edward Island Wa-
ter Resources Authority
N.S.:—Nova Scotia Water Resources
Commission
N.B.:—Dept. of Natural Resources
Dept. of Municipal Affairs
Que.:—Dept. of Natural Resources
Ont.:—Ontario Water Resources
Commission
Dept. of Lands and Forests
Man.:—Dept. of Mines and Natural
Resources, Water Control
Branch
Sask.:—Saskatchewan Water Re-
sources Commission
Dept. of Agriculture
Saskatchewan Research Council
Alta.:—Dept. of Agriculture
B.C.:—Dept. of Lands, Forests and
Water Resources

Dept. of National Health and Welfare
Company of Young Canadians
Dept. of Indian Affairs and Northern
Development
Community Affairs Branch
National Advisory Committee on
the Rehabilitation of Disabled
Persons
Unemployment Insurance Commis-
sion
National Film Board
Dominion Bureau of Statistics

WELFARE
For Welfare of
Veterans see
"Veterans Affairs"

Nfld.—U.S., Alta.:—Depts. of
Public Welfare
P.E.I., Sask.:—Depts. of Welfare
N.B.:—Dept. of Health and Welfare
Que.:—Dept. of Family and Social
Welfare
Ont.:—Dept. of Social and Family
Services
Man.:—Dept. of Health and Social
Services
B.C.:—Dept. of Social Welfare
Y.T.:—Dept. of Welfare (Director)
N.W.T.:—Dept. of Social Develop-
ment (Director)

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Indian Affairs and Northern Development Canadian Wildlife Service Commissioner of Yukon Territory, Whitehorse Dept. of Fisheries and Forestry Information and Consumer Service National Capital Commission (Gatineau Park and Greenbelt) National Museums of Canada National Film Board	WILDLIFE	Nfld.:—Dept. of Mines, Agriculture and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Natural Resources Que.:—Dept. of Tourism, Game and Fish Man.:—Dept. of Mines and Natural Resources, Wildlife Branch Sask.:—Dept. of Natural Resources, Wildlife Branch B.C.:—Dept. of Recreation and Conservation

PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

The articles marked with one asterisk (*) are available in reprint form from the Information Division, Dominion Bureau of Statistics. Those marked with two asterisks are available from the source department.

Subject and Article	Contributor	Edition	Page
Agriculture—			
Historical Background of Canadian Agriculture.....	G. S. H. BARTON.....	1939	187-190
The Major Soil Zones and Regions of Canada	P. C. STOBBE.....	1951	352-356
The Board of Grain Commissioners.....	W. J. MACLEOD.....	1960	957-958
The Canadian Wheat Board and its Role in Grain Marketing.....	C. B. DAVIDSON.....	1960	958-960
Changes in Canadian Agriculture as Reflected by the Census of 1961.....	—	1963-64	409-415
Agriculture in the Canadian Economy, 1964..	—	1965	440-446
Contribution of the Canada Department of Agriculture to Modern Agricultural Science	—	1966	457-461
**Federal Assistance in Livestock Improvement.....	—	1967	453-457
Art, Literature and the Press—			
*The Democratic Functioning of the Press....	W. A. BUCHANAN.....	1945	744-748
Report of the Royal Commission on National Development in the Arts, Letters and Sciences.....	—	1952-53	342-345
A History of Canadian Journalism, 1752-(circa) 1900.....	W. H. KESTERTON.....	1957-58	920-934
A History of Canadian Journalism (circa) 1900-1958.....	W. H. KESTERTON.....	1959	883-902

Subject and Article	Contributor	Edition	Page
Banking and Finance—			
Bank of Canada and its Relation to the Monetary System.....	—	1937	881-885
Historical Sketch of Currency and Banking..	—	1938	900-906
Wartime Control under the Foreign Exchange Control Board.....	R. H. TARR.....	1941 1942	833-835 830-833
Post-War Financial Policy.....	—	1954	1061-1064
Commercial Banking in Canada.....	J. DOUGLAS GIBSON.....	1961	1115-1120
Citizenship—			
Early Naturalization Procedure and Events Leading up to the Canadian Citizenship Act.....	—	1951	153-155
Climate and Meteorology—			
Weather Control Canadian Weather... and Precipitation of Northern Western Canada.....	SIR FREDERICK STUPART... A. J. CONNOR..... A. J. CONNOR.....	1925 1930 1933	36-40 41-56 47-59
Climate of Canada (textual material in the 1959 Year Book and the data in the 1960 edition but the includes both textual and tabular data).....	C. C. BOUGHNER and M. K. THOMAS.....	1959 1960	23-51 31-77
**The Climate of the Canadian Arctic.....	H. A. THOMPSON.....	1967	55-74
Communications—			
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PART III.—REGISTER OF OFFICIAL APPOINTMENTS*

The following list includes official appointments for the period Mar. 21, 1968 to Apr. 30, 1969,† continuing the list published in the 1968 Year Book at pp. 1228-1236. Appointments to the Governor General's Staff, judicial appointments, appointments to advisory councils and appointments of limited or local importance are not included.

Queen's Privy Council for Canada.—1968. *Apr. 20*, Donald Stovel Macdonald, John Carr Munro and Gérard Pelletier: to be members. *Apr. 26*, Jack Davis: to be a member. *July 6*, Horace Andrew Olson, Jean-Eudes Dubé, Stanley Ronald Basford, Donald Campbell Jamieson, Eric William Kierans, Robert Knight Andras, James Armstrong Richardson and Otto Emil Lang: to be members.

*Extracts from the *Canada Gazette*, with some additions. All academic and honorary degrees and military honours have been omitted.

†Appointments made immediately preceding this date but not yet gazetted are not included.

Lieutenant-Governors.—1968. *Apr. 20*, Hon. William Ross Macdonald, Brantford, Ont.: to be Lieutenant-Governor of the Province of Ontario. *June 28*, Hon. John Robert Thompson, Vancouver, B.C.: to be Lieutenant-Governor of the Province of British Columbia. *July 27*, Victor O. Bédard Oland, Halifax, N.S.: to be Lieutenant-Governor of the Province of Nova Scotia. *Aug. 1*, Willibald Joseph MacDonald: to continue as Lieutenant-Governor of the Province of Prince Edward Island for an additional year. 1969. *Mar. 27*, Ewart Macdonald, St. John's, Nfld.: to be Lieutenant-Governor of the Province of Newfoundland.

Cabinet Ministers.—1968. *Apr. 20*, Hon. Donald Stovel Macdonald, Hon. John Joseph Gagnon and Hon. Gérard Pelletier: to be Ministers without Portfolio. Hon. Paul James Guillaume Martin: to be Minister without Portfolio. Hon. Mitchell Sharp: to be Secretary of State for External Affairs. Hon. Charles Mills Drury: to be Minister of Trade and Commerce. Hon. Edgar John Benson: to be Minister of Finance and Economic Development. Hon. Jean-Luc Pepin: to be Minister of Labour. Hon. Jean Marchand: to be Secretary of State of Canada. Hon. John Napier Turner: to be Solicitor General. Hon. John Carr Davis: to be a Minister without Portfolio. *July 6*, Each of the following Members of the Queen's Privy Council for Canada, to be appointed to the office following the death of Hon. George James McElraith, Solicitor General of Canada; Hon. Arthur Laing, Minister of Public Works; Hon. Allan Joseph MacEachen, Minister of Manpower and Immigration; Hon. Charles Mills Drury, President of the Treasury Board; Hon. Jean-Luc Pepin, Minister of Industry and Minister of Trade and Commerce; Hon. Jean Marchand, Minister of Forestry and Rural Development; Hon. John James Greene, Minister of Energy, Mines and Resources; Hon. Joseph Julien Jean-Pierre Côté, Minister of National Development; Hon. John Napier Turner, Minister of Justice and Attorney General of Canada; Hon. Jean Gauthier, Minister of Indian Affairs and Northern Development; Hon. Bryce Mackenzie, Minister of Labour; Hon. David Stovel Macdonald, President of the Queen's Privy Council for Canada; Hon. John Carr Munro, Minister of National Health and Welfare; Hon. Gérard Pelletier, Secretary of State of Canada; Hon. Jack Davis, Minister of Fisheries; Hon. Horace Andrew Olson, Minister of Agriculture; Hon. Jean-Luc Pepin, Minister of Veterans Affairs; Hon. Stanley Ronald Basford, Minister of Science and Corporate Affairs; Hon. Donald Campbell Jamieson, Minister of Defence Production; Hon. Eric William Kierans, Postmaster General; Hon. Robert Knight Andras, Minister without Portfolio; Hon. James Armstrong Richardson, Minister without Portfolio; Hon. John Paul Laing, Minister without Portfolio. 1969. *Apr. 1*, Hon. Paul Joseph James Guillaume Martin: to be Leader of the Government in the Senate. Hon. Edgar John Benson: to be Minister of Finance; Hon. Jean-Luc Pepin: to be Minister of Industry, Trade and Commerce; Hon. Jean Marchand: to be Minister of Regional Economic Expansion; Hon. John Davis: to be Minister of Fisheries and Forestry; Hon. Donald Campbell Jamieson: to be Minister of Supply and Services; Hon. Eric William Kierans: to be Minister of Communications.

Senators.—1968. *Apr. 8*, Raymond Eudes, Montreal, Que.: to be a Senator for the Province of Quebec. William John Petten, St. John's, Nfld.: to be a Senator for the Province of Newfoundland. *Apr. 20*, Édouard Joseph Thériault, Digby, N.S.: to be a Senator for the Province of Nova Scotia. Hon. Paul Joseph James Guillaume Martin, Whitehorse, Y.T.: to be a Senator for the Province of Ontario. *June 28*, Hon. Hédard-J. Gauthier, Capetown, N.B.: to be a Senator for the Province of New Brunswick. *Sept. 5*, Hon. Jean-Paul Deschatelets, a Member of the Senate: to be Speaker. *Sept. 10*, Louis de Gooze, Capetown, Montreal, Que.: to be a Senator for the Province of Quebec.

Deputy Ministers.—1968. *July 15*, Tom Kent: to be Deputy Minister of Forestry and Rural Development. Joseph Louis Eugène Couillard: to be Deputy Minister of Manpower and Immigration. *Oct. 3*, Paul André Faguy: to be Deputy Postmaster General. *Oct. 27*, Louis Lévesque: to be Under Secretary of State. *Nov. 28*, Ernest A. Côté: to be Deputy Solicitor General from Dec. 14, 1968. John S. Hodgson: to be Deputy Minister of Veterans Affairs from Dec. 14, 1968. James Douglas Love: to be Deputy Minister of Labour

from Jan. 1, 1969. *Dec. 12*, Oliver Gerald Stoner: to be Deputy Minister of Transport from Feb. 1, 1969. **1969. Mar. 31**, Allan E. Gotlieb: to be Deputy Minister of Communications; A. W. H. Needler: to be Deputy Minister of Fisheries and Forestry; J. H. Warren: to be Deputy Minister of Industry, Trade and Commerce; Tom Kent: to be Deputy Minister of Regional Economic Expansion; H. R. Balls: to be Deputy Minister of Services; G. W. Hunter: to be Deputy Minister of Supply.

Diplomatic Appointments.—1968. The following diplomatic appointments were announced during the year. R. V. Gorham: to be Canadian Commissioner to the International Commission for Supervision and Control in Cambodia. Robert Choquette: to be Canadian Ambassador to Argentina with concurrent accreditation to Paraguay and Uruguay. Michel Gauvin: to be Canadian Ambassador to the Somali Republic. Charles Eustace McGaughey: to be Canadian Ambassador to Afghanistan. George Kinnear Grande: to be Canadian Ambassador to Norway, with concurrent accreditation to Iceland. Victor Campbell Moore: to be Canadian High Commissioner to Jamaica. Paul André Beaulieu: to be Canadian Ambassador to France. John Clemence Gordon Brown: to be Canadian High Commissioner to Cyprus. James A. Roberts: to be Canadian Ambassador to Switzerland with concurrent accreditation to Algeria. Donald Wallace Munro: to be Canadian Ambassador to Costa Rica with concurrent accreditation to El Salvador, Honduras, Nicaragua and Panama. James Joachim McCardle: to be Canadian Ambassador to Ireland. Alfred Pike Bissonnet: to be Canadian Ambassador to Indonesia. Thomas Blake Burrill Wainman-Wood: to be Canadian Ambassador to Czechoslovakia with concurrent accreditation to Hungary. **1969.** Douglas Barcham Hicks: to be Canadian High Commissioner to Ghana, with concurrent accreditation as Canadian Ambassador to the Ivory Coast, Togo and Upper Volta. Alfred John Pick: to be Canadian Ambassador to the Netherlands. Marc Baudouin: to be Canadian Ambassador to the Democratic Republic of the Congo and concurrently to the Republic of the Congo and to Rwanda.

Agricultural Products Board.—1968. *Apr. 30*, R. P. Poirier, Assistant Deputy Minister (Economics), Canada Department of Agriculture: to be a member.

Agricultural Stabilization Board.—1968. *Apr. 30*, R. P. Poirier, Assistant Deputy Minister (Economics), Canada Department of Agriculture: to be a member.

Air Canada.—1968. *Oct. 3*, Roderick Hugh McIsaac, Winnipeg, Man.: to be again a Director until Oct. 1, 1971. *Nov. 25*, Yves Pratte, Quebec, Que.: to be a Director and Chairman. John R. Baldwin, Ottawa, Ont.: to be President.

Anti-Dumping Tribunal.—1969. *Jan. 3*, W. W. Buchanan, J. P. C. Gauthier, and B. G. Barrow, all of Ottawa, Ont.: to be members for seven years from Jan. 1, 1969, Mr. Buchanan to be Chairman. *Jan. 30*, C. Douglas Arthur: to be Secretary and to perform the functions of a Director of Inquiries.

Army Benevolent Fund Board.—1968. *July 19*, J. G. Gauvreau: to be again a member for four years from July 9, 1968, and to be Chairman. Stuart A. Cobbett: to be again a member for four years from July 16, 1968. *Oct. 31*, Brigadier I. S. Johnston: to be again a member for four years from Dec. 14, 1968.

Bank of Canada.—1968. *July 8*, Louis Rasminsky: to be again Governor for seven years from July 24, 1968. *Dec. 12*, John Robert Beattie: to be again Deputy Governor for seven years from Jan. 1, 1969. **1969. Mar. 24**, Maurice Riel, Montreal, Que.: to be a Director.

Canada Council.—1968. *Apr. 10*, David Slater, Kingston, Ont.; Louis Desrochers, Edmonton, Alta.; Mrs. Pauline McGibbon, Toronto, Ont.; Eileen Ross, Montreal, Que.; and Léon Lortie, Montreal, Que.: to be members for three years from May 25, 1968.

Canadian Broadcasting Corporation.—1968. *Apr. 27*, Jacques Archambault, Quebec, Que.: to be a Director for four years from Apr. 1, 1968.

Canadian Commercial Corporation.—1968. *Nov. 26*, Jack Stewart Glassford: to be President. *1969. Jan. 14*, Henry Lloyd Meuser, Assistant Deputy Minister, Department of National Defence, and Donald Hunter Gilchrist, Director, International Defence Programs Branch, Department of Trade and Commerce: to be Directors.

Canadian Corporation for the 1967 World Exhibition.—1968. *May 25*, Alexander A. Macdonald: to be a Director from Apr. 15, 1968. *July 19*, Herbert W. Hignett, President, Central Mortgage and Housing Corporation: to be Commissioner General from June 1, 1968. Jean Lupien, Vice-President, Central Mortgage and Housing Corporation: to be Deputy Commissioner General. *Sept. 5*, Robert F. Shaw, former Commissioner General and President: to be a Director.

Canadian Film Development Corporation.—1969. *Feb. 27*, Michael D. Spencer: to be Executive Director from Feb. 17, 1969.

Canadian Livestock Feed Board.—1968. *Apr. 27*, James Maurice McDonough, Montreal, Que.: to be a member.

Canadian National Railways.—1969. *Jan. 3*, James Raymond Griffith, Saskatoon, Sask.: to be again a Director until Oct. 1, 1969. Herbert C. Pinder, Saskatoon, Sask.: to be again a Director until Oct. 1, 1971. Austin Hayes, Halifax, N.S.: to be a Director until Oct. 1, 1971. Yves Pratte, Quebec, Que.: to be a Director for three years from Jan. 1, 1969.

Canadian Pension Commission.—1968. *July 31*, Roger Joseph Teillet, St. Bonifacio, Man.: to be an *ad hoc* Commissioner from July 31, 1968 until Sept. 1, 1968, and a Commissioner for ten years from Sept. 1, 1968. *Aug. 21*, Laurence Wilmott Brown: to be again an *ad hoc* member for one year from Oct. 3, 1968. *Nov. 14*, Ulric Blier: to be again an *ad hoc* member for one year from Dec. 1, 1968. *Dec. 17*, Joseph Gontran Bissot: to be again an *ad hoc* member for one year from Jan. 15, 1969. *1969. Feb. 13*, Armand Edouard Brunet, Lucerne, Que.: to be a member from Feb. 15, 1969 to Jan. 10, 1978. *Nov. 18*, John Lyndon Thompson: to be again an *ad hoc* member for one year from Apr. 1, 1969. Thomas Duncan Anderson: to be again a Commissioner and Chairman for one year from Apr. 6, 1969.

Canadian Transport Commission.—1968. *Sept. 13*, Michael J. P. Cuddihy: to be Special Assistant to the Vice-President. *Dec. 17*, Herbert Henry Griffin, Ottawa, Ont.: to be again a Commissioner from Jan. 19, 1969 until Jan. 20, 1976. *1969. Mar. 13*, G. Frank Lafferty, Ottawa, Ont.: to be a member for ten years.

Cape Breton Development Corporation.—1968. *Apr. 10*, Kenneth A. West, Toronto, Ont.: to be a Director for five years.

Central Mortgage and Housing Corporation.—1968. *Mar. 28*, Mrs. Jean Newman, Toronto, Ont.: to be again a Director for three years from Apr. 1, 1968. *1969. Mar. 9*, Thomas L. McGloan, Saint John, N.B.; and Jean-Marie Roy, Ste. Foy, Que.: to be Directors for three years.

Company of Young Canadians.—1968. *Nov. 7*, Claude Vidal, Montreal, Que.: to be Executive Director from Dec. 1, 1968.

Crown Assets Disposal Corporation.—1968. *May 8*, Henry Lloyd Meuser: to be a Director for three years from May 1, 1968. William Henry Huck: to be a Director for three years from May 13, 1968. *Sept. 5*, Gordon W. Hunter: to be again a Director for three years from July 13, 1968.

Defence Research Board.—1968. *Aug. 7*, Napoléon LeBlanc, Vice-Rector, Université Laval, Quebec, Que.: to be a member for three years from July 19, 1968. Maurice L'Abbé, Vice-Dean of Science, Université de Montréal: to be a member for three years

from July 19, 1968. Gordon W. Hunter, Deputy Minister of Defence Production: to be a member for three years from June 9, 1968. Henry Edmison Duckworth, Vice-President (Academic), University of Manitoba, Winnipeg, Man.: to be again a member for three years from Sept. 1, 1968.

Economic Council of Canada.—1968. *Aug. 15*, Donald MacDonald, President, Canadian Labour Congress, Ottawa, Ont.: to be a member for three years. **1969.** *Mar. 6*, François E. Cleyn, Huntingdon, Que.; Walter Charles Koerner, Vancouver, B.C.; W. Ladyman, Toronto, Ont.; Stanley A. Little, Ottawa, Ont.; and J. R. Murray, Winnipeg, Man.: to be again members for three years. *Mar. 13*, Mrs. A. F. W. Plumptre, Ottawa, Ont.; and Francis George Winspear, Edmonton, Alta.: to be again members for three years. Lucien Saulnier, Montreal, Que.: to be a member for three years. *Apr. 3*, David L. McQueen, a Director: to be Vice-Chairman. *Apr. 17*, Mrs. Sylvia Ostry, Ottawa, Ont.: to be a Director for seven years.

Export Credits Insurance Corporation.—1968. *July 17*, James R. Midwinter: to be an alternate Director for the Deputy Minister of Trade and Commerce.

Farm Credit Corporation.—1968. *May 22*, André Saumier, Assistant Deputy Minister, Department of Forestry and Rural Development; and William Esmond Jarvis, Assistant Deputy Minister, Department of Agriculture: to be members for three years from May 23, 1968. Robert Broughton Bryce, Deputy Minister of Finance: to be member for three years from May 23, 1968.

Fisheries Prices Support Board.—1968. *May 29*, G. L. Grant: to be Chairman from Apr. 1, 1968. **1969.** *Jan. 21*, Jack B. Estey, Halifax, N.S.: to be a member from Jan. 1, 1969 to Dec. 31, 1973.

Freshwater Fish Marketing Corporation.—1969. *Mar. 7*, David Corney: to be President for five years. Denis Harvey: to be Chairman for two years. J. B. Bergevin and R. N. Gordon: to be Directors for two years.

General Adjustment Assistance Board.—1968. *Aug. 7*, Douglas Neville Kendall, Toronto, Ont.: to be a member from Aug. 2, 1968. *Dec. 10*, Paul A. Ouimet, Montreal, Que.: to be a member.

Historic Sites and Monuments Board of Canada.—1968. *May 8*, Allan R. Turner, Regina, Sask.: to be Chairman from May 1, 1968 to June 30, 1972. James K. Nesbitt, Victoria, B.C.: to be a member for five years from June 1, 1968. *May 29*, Lewis H. Thomas, Edmonton, Alta.: to be a member for three years. George MacBeath, Fredericton, N.B.: to be a member for three years. *June 8*, James John Talman, London, Ont.: to be again a member for five years. *Oct. 3*, Peter B. Waite, Halifax, N.S.: to be a member for three years. *Dec. 17*, Donald G. Creighton, Toronto, Ont.: to be again a member for three years from Nov. 10, 1968. **1969.** *Feb. 13*, Jean-Jacques Lefebvre, Montreal, Que.: to be again a member for five years.

Immigration Appeal Board.—1968. *May 22*, Jean-Pierre Houle and James A. Byrne: to be members.

International Commission for the Northwest Atlantic Fisheries.—1968. *Apr. 3*, Spencer G. Lake, Burgeo, Nfld.: to be a Canadian Commissioner for two years.

International Joint Commission.—1968. *Oct. 8*, Anthony Scott, Vancouver, B.C.: to be a Commissioner until July 1, 1970.

International North Pacific Fisheries Commission.—1968. *Aug. 21*, Donovan Francis Miller, Vancouver, B.C.: to be a member for two years from Aug. 21, 1968. *Oct. 22*, Richard Nelson, Sr., New Westminster, B.C.: to be again a member for two years from Oct. 31, 1968.

International Pacific Halibut Commission.—1968. *Oct. 29*, F. W. Millerd, Vancouver, B.C.: to be again a member until Oct. 31, 1970.

Manitoba-Saskatchewan Boundary Commission.—1968. *Dec. 10*, William M. Somers, Controller of Surveys, Saskatchewan Department of Natural Resources: to be a member.

Medal Council of Canada.—1968. *Dec. 17*, Richard Street Duggan, St. David's, Ont.; Jean-Louis Boudant, Quebec, Que.; and Charles Walton, Winnipeg, Man.: to be members for four years.

National Arts Centre.—1968. *Oct. 3*, Paul Hébert, Montreal, Que.: to be Vice-Chairman of the Board of Trustees until Dec. 1, 1969. *Dec. 20*, Dorothy Maude Somerset, Toronto, Ont.; and Arnold Walter, Toronto, Ont.: to be again members of the Board of Trustees until Dec. 1, 1969. Mrs. Esther Genser, Winnipeg, Man.: to be again a member of the Board of Trustees until Dec. 1, 1970.

National Battlefields Commission.—1968. *Mar. 28*, John H. C. McGreevy, Quebec, Que.: to be a Commissioner. Renault St. Laurent, Quebec, Que.: to be Chairman.

National Capital Commission.—1968. *Apr. 25*, Allan K. Hay, Ottawa, Ont.: to be a member for one year.

National Design Council.—1968. *May 29*, John C. Parkin, Toronto, Ont.: to be a member and Chairman for two years. C. A. Peachey, Montreal, Que.; C. A. Pollock, Montreal, Ont.; I. C. Pollack, Quebec, Que.; C. Stewart, Toronto, Ont.; G. W. Hunter, Ottawa, Ont.; and Lucien Lalonde, Ottawa, Ont.: to be members for two years. D. S. Mulvern, Winnipeg, Man.; H. Kelman, Ottawa, Ont.; Mrs. T. Bata, Toronto, Ont.; H. Warren, Ottawa, Ont.; S. S. Reisman, Ottawa, Ont.; Marcel Girard, Montreal, Que.; Robert Jordan, Vancouver, B.C.; and Philippe de Gaspé Beaubien, Montreal, Que.: to be members for three years.

National Livery Board.—1968. *May 22*, Douglas M. Fraser, a member: to be a member from July 1, 1968 to Aug. 15, 1973. Jack Garry Stabback: to be a member from July 1, 1968.

National Film Board.—1968. *Apr. 10*, Mrs. Molly Lamb Bobak, Fredericton, N.B.; and Louis Ruxx, Montreal, Que.: to be members for three years. Peter John Brown, Montreal, Que.: to be again a member for three years from Mar. 4, 1968.

National Gallery of Canada.—1968. *Mar 28*, Jean S. Boggs, Ottawa, Ont.: to be Director from Apr. 1, 1968.

National Joint Council.—1968. *Sept. 5*, R. C. Labarge, Deputy Minister of Revenue (Customs and Excise); G. L. Lalonde, Deputy Minister of Public Works; G. L. Allen, Deputy Secretary of State; and W. H. Wilson, Deputy Postmaster General: to be the members of the Official Side. J. D. Love, Assistant Secretary (Personnel), Treasury Board; and P. A. Fagny, Assistant Deputy Postmaster General (Personnel): to be the members of the Official Side. S. S. Reisman, Secretary of the Treasury Board; H. H. Balls, Comptroller of the Treasury; Marcel Cadieux, Under Secretary of State for External Affairs; E. A. Côté, Deputy Minister of Veterans Affairs; J. A. MacDonell, Deputy Minister of Indian Affairs and Northern Development; and K. F. Tupper, Deputy Minister of Agriculture: to be members; Mr. Reisman to be Chairman and Mr. Steele to be Vice-Chairman of the Official Side. R. M. Adams, Director, Employment and Conditions Division, Personnel Policy Branch, Treasury Board; J. P. Gaudin, Director General, Personnel, Department of Transport; H. D. Clark, Director, Personnel and Social Insurance, Department of Finance; R. G. Martin, Director, Social Relations Division, Personnel Policy Branch, Treasury Board; F. L. W. McKim, Director, Administration and Personnel, National Research Council; T. G. Morry, Assistant

Deputy Minister (Personnel), Department of National Defence; H. A. D. Scott, Director, Planning and Co-ordination Division, Personnel Policy Branch, Treasury Board; and J. K. Starnes, Assistant Under Secretary of State for External Affairs: to be alternate members; Mr. J. D. Love to be alternate Chairman and H. A. D. Scott to be alternate Vice-Chairman of the Official Side. *Dec. 3*, J. N. Crawford, Deputy Minister, Department of National Health and Welfare, *vice* G. G. E. Steele; and P. A. Faguy, Deputy Postmaster General, *vice* W. H. Wison: to be members to the Official Side; and C. C. Tuck, Director of Personnel, Department of Agriculture, *vice* P. A. Faguy: to be an alternate member to the Official Side. **1969.** *Feb. 11*, J. P. Connell, Treasury Board: to be alternate Chairman of the Official Side. Each of the following persons to be alternate members to the Official Side: R. Steward, Department of Indian Affairs and Northern Development, *vice* J. D. Love; J. B. Hartley, Department of National Health and Welfare, *vice* C. C. Tuck; and G.-P. Vachon, Treasury Board, *vice* R. G. Martin.

National Library.—1968. *May 29*, J. Guy Sylvestre: to be National Librarian from June 1, 1968, *vice* W. Kaye Lamb.

National Museums of Canada.—1968. *Mar. 28*, David M. Baird, A. W. F. Banfield, and William E. Taylor, all of Ottawa, Ont.: to be Directors from Apr. 1, 1968.

National Parole Board.—1968. *Dec. 20*, Ralph Willard Dent, Guelph, Ont.: to be a member for ten years. Thomas George Street: to be again a member and Chairman for ten years from Jan. 1, 1969. **1969.** *Mar. 20*, André Therrien, Montreal, Que.: to be a member for ten years.

National Research Council.—1968. *June 12*, J. S. Dewar, London, Ont.; M. Laird, St. John's, Nfld.; and P. R. Sandwell, Vancouver, B.C.: to be members until Mar. 31, 1971. *Nov. 19*, Kenneth Franklin Tupper: to be Vice-President (Administration). Richard D. Hiscocks: to be Vice-President (Scientific). Donald J. LeRoy: to be Vice-President (Scientific) for two years from July 1, 1969. *Dec. 17*, William Stuart Hoar, Vancouver, B.C.: to be a member until Apr. 1, 1971. **1969.** *Mar. 13*, J. Stefan Dupré, Toronto, Ont.; and Guy Savard, Montreal, Que.: to be members until Apr. 1, 1971.

Northern Canada Power Commission.—1969. *Feb. 13*, J.-B. Bergevin: to be a member.

Oromocto Development Corporation.—1969. *Mar. 13*, C. F. Johns, Ottawa, Ont.: to be President. Arthur McF. Limerick, Fredericton, N.B.; F. D. Millar, Ottawa, Ont.; Colin McKay, Fredericton, N.B.; Ron Stevenson, Fredericton, N.B.; and Alden Clark, Fredericton, N.B.: to be members.

Public Service Commission.—1969. *Jan. 30*, Ruth Elizabeth Addison: to be a member until May 7, 1971.

Public Service Staff Relations Board.—1968. *Apr. 10*, J. F. W. Weatherill, Toronto, Ont.: to be Adjudicator for two years from Apr. 1, 1968. *June 12*, H. W. Arthurs, Toronto, Ont.: to be again a part-time Adjudicator until Sept. 30, 1970, and to be Chief Adjudicator until Sept. 30, 1968. *Oct. 29*, W. Steward Martin, Winnipeg, Man.: to be part-time Chief Adjudicator for six months from Oct. 1, 1968.

Royal Canadian Mint.—1969. *Apr. 1*, Alan B. Hockin and Robert MacDougall Keith: to be Directors for two years from Apr. 1, 1969. Gordon Ward Hunter: to be Chairman for four years from Apr. 1, 1969.

Royal Commission on Bilingualism and Biculturalism.—1968. *Oct. 8*, Jean-Louis Gagnon, Montreal, Que.: to be Co-chairman, *vice* André Laurendeau, deceased. André Raynauld, Montreal, Que.: to be a Commissioner.

Senate Council of Canada.—1968. *Sept. 12*, J. M. R. Beveridge, Wolfville, N.S.; W. L. Stender, Ottawa, Ont.; Pierre Dansereau, Montreal, Que.; P. A. Giguère, Quebec, Que.; Leonard Hynes, Montreal, Que.; and Joseph Kates, Toronto, Ont.: to be members for one year. *Sept. 13*, R. Larose, Dorval, Que.; and F. C. MacIntosh, Montreal, Que.: to be again members for three years.

Tariff Board.—1968. *Aug. 15*, Francis Leo Corcoran: to be again a member and second Vice-Chairman for six months until Jan. 1, 1969. *Apr. 17*, Louis de la Chesnaye, Ottawa, Ont.: to be again a member and Chairman from Aug. 1, 1969 to Apr. 7, 1971. *George Herbert Glass*, Ottawa, Ont.: to be again a member and first Vice-Chairman until July 2, 1975. *Wilfred Tennyson Dauphinee*, Halifax, N.S.: to be a member and second Vice-Chairman until Aug. 14, 1975.

War Veterans Allowance Board.—1968. *Apr. 25*, Marcel-Robert Dupuis: to be a temporary member for one year from Aug. 1, 1968. *July 31*, John Harold McDougal Doidge, Ottawa, Ont.: to be again a temporary member for one year from Oct. 15, 1968. *1969. Jan. 27*, John S. Hodgson, Deputy Minister of Veterans Affairs: to be an (additional) member; and F. T. Mace, Assistant Deputy Minister of Veterans Affairs: to be also one (to Mr. Hodgson). *Mar. 13*, Ernest Gordon Blair Foote, Ottawa, Ont.: to be again a temporary member for one year from May 15, 1969. *Ronald W. Fairclough*, Ottawa, Ont.: to be a member from May 1, 1969.

Miscellaneous.—1968. *May 15*, Hon. Edgar John Benson, Minister of Finance: to be Governor of the International Monetary Fund, Governor of the International Bank for Reconstruction and Development and Governor of the Asian Development Bank, *vice* Hon. Mitchell Sharp. *June 12*, Archibald Malloch Laidlaw: to be Commissioner of Patents from Aug. 1, 1968. *July 24*, Raymond Landry: to be Superintendent of Bankruptcy from Sept. 1, 1969, *vice* Roger Tassé. *1969. Mar. 13*, Hon. Mr. Justice Jacques Boucher, Hull, Que.: to be a member of the Pension Appeals Board.

PART IV.—ORDER OF CANADA AWARDS

In 1967, the Centennial of Confederation, there was established a system of honours and awards for Canada. On the recommendation of the Government, Her Majesty Queen Elizabeth the Second approved the issue of Letters Patent establishing a society of honour to be known as "The Order of Canada" for the purpose of according recognition to Canadian citizens and other persons for merit. The Order consists of three awards—the Companion of the Order of Canada, the Medal of Courage and the Medal of Service. The Chancellor and Principal Companion of the Order is the Governor General and recommendations for awards are made directly to the Governor General by an Advisory Council composed of the Chief Justice of Canada (Chairman), the Clerk of the Privy Council, the Under Secretary of State, the Chairman of the Canada Council, the President of the Royal Society of Canada and the President of the Association of Universities and Colleges of Canada. Companions of the Order are selected on the basis of "merit, especially service to Canada or to humanity at large" and the maximum number shall never exceed 150. The Medal of Courage is awarded for the performance of "an act of conspicuous courage in circumstances of great danger" and is not, of course, limited to a fixed maximum number. The Medal of Service is awarded for different categories of meritorious service from that for Companions and not more than 50 may be given in any one year.

On July 6, 1967, the Governor General, in his capacity as Chancellor and Principal Companion of the Order of Canada, appointed the following:—

To be Companions of the Order of Canada

Edgar Spinney ARCHIBALD, C.B.E.	Colonel Robert Samuel McLAUGHLIN, E.D., C.D.
Lieutenant-Colonel Edwin Albert BAKER, O.B.E., M.C.	Honourable John Babbitt McNAIR, Q.C.
Marius BARBEAU	Donald Walter Gordon MURRAY, M.D.
Lieutenant-General Eedson Louis Millard BURNS, D.S.O., O.B.E., M.C.	Monseigneur Alphonse Marie PARENT, S.T.D.
George Brock CHISHOLM, C.B.E., M.C., E.D., M.D.	Major-General the Honourable George Randolph PEARKES, V.C., P.C., C.B., D.S.O., M.C., C.D.
Honourable M. J. William COLDWELL, P.C.	Alfred PELLAN
Donald Grant CREIGHTON	Wilfrid PELLETIER, C.M.G.
Jean DRAPEAU, Q.C.	Colonel Wilder Graves PENFIELD, O.M., C.M.G., M.D.
Maureen FORRESTER (Mrs. Eugene KASH)	Norman Alexander ROBERTSON
Raoul JOBIN	Gabrielle Roy (Mme Marcel CARBOTTE)
Walter Charles KOERNER	Right Honourable Louis Stephen St. LAURENT, P.C., Q.C.
Arthur LISMER	Francis Reginald SCOTT, Q.C.
John Alexander MacAULAY, Q.C.	Henry George THODE, M.B.E.
Chalmers Jack MACKENZIE, C.M.G., M.C.	Walter Palmer THOMPSON
William Archibald MACKINTOSH, C.M.G.	Honourable Madame Georges P. VANIER, P.C.
Hugh MacLENNAN	Leolyn Dana WILGRESS
Léo MARION	Healey WILLAN
Right Honourable Vincent MASSEY, P.C. (Canada), P.C. (United Kingdom), C.H.	

To Receive the Medal of Service of the Order of Canada

Pierrette ALARIE (Mme Léopold SIMONEAU)	David Arnold KEYS
Reverend David BAUER	Gustave LANTOT, Q.C.
James M. BENTLEY	Lawrence M. LANDE
Mme Yvette BRIND'AMOUR	Gilles LEFEBVRE
Mme Thérèse CASGRAIN, O.B.E.	Most Reverend Georges-Henri LÉVESQUE
Floyd Sherman CHALMERS	Elizabeth Pauline MacCALLUM
Gregory CLARK, O.B.E., M.C.	Augustine A. MacDonald, M.D.
Alexander COLVILLE	Brian MacDonald
Reverend Clément CORMIER, D.D.	Monseigneur Joseph Thomas Arthur MAHEUX, O.B.E.
Air Marshal Wilfred Austin CURTIS, C.B., C.B.E., D.S.C., E.D.	Reverend Mother MAURA
Mme Pauline DONALDA	Vernon Francis McADAM
Philip Sydney FISHER, C.B.E., D.S.O., D.S.C.	Leonard Hanson NICHOLSON, M.B.E.
Robert MacLaren FOWLER	Jean PALARDY
Lawrence FREIMAN	Harry Thomas PATTERSON
Jean GASCON	Isaac PHILIS
Gratien GÉLINAS	Maurice RICHARD
Gustave GINGRAS, M.D.	Paul-André RIVARD
Robert GLEN	Chester Alvin RONNING
H. Carl GOLDENBERG, O.B.E., Q.C.	Phyllis Gregory (Mrs. Frank M.) ROSS
John W. GOODALL	Adelaide (Mrs. D. B.) SINCLAIR, O.B.E.
Léo GUINDON	Ralph STEINHAEUER
Raymond GUSHUE, C.B.E., Q.C.	Marlene Stewart (Mrs. J. D.) STREIT
Henry Foss HALL, D.D.	Kenneth Wiffin TAYLOR, C.B.E.
Eric Lafferty HARVEY, Q.C.	Honourable William Ferdinand Alphonse TURGEON, P.C., Q.C.
John Steven HIRSCH	William Elgin VAN STEENBURGH, O.B.E., E.D.
William Bruce HUTCHISON	Alje VENNEMA, M.D.
Claude JODOIN	Adam Hartley ZIMMERMAN, O.B.E.
KENOJUAK	

OFFICIAL SOURCES OF INFORMATION

On June 22, 1967, the Governor General, in his capacity as Chancellor and Principal Companion of the Order of Canada, appointed the following:—

To be Companions of the Order of Canada

Charles H. BEST, C.B.E., M.D.	Wilfrid Bennett LEWIS, C.B.E.
Isidore BRONFMAN	Honourable James M. MACDONNELL, P.C., M.C., Q.C.
René de Lionel CHEVRIER, P.C., Q.C.	Lois MARSHALL
Commandant-Colonel the Honourable George DREW, P.C., C.D., Q.C.	Hilda NEATBY
René DUFOY, C.M.G.	Colonel the Honourable Sir Leonard C. OUTERBRIDGE, Kt., C.B.E., D.S.O., C.D.
Luc GENEST, M.D.	Robert F. SHAW
René GILLES	Honourable Robert TASCHEREAU, P.C., Q.C.
Alexander Young JACKSON, C.M.G.	

To Receive the Medal of Service of the Order of Canada

Philippe de Gaspé BEAUBIEN	Yves JASMIN
René DE BELLEFEUILLE	Yousuf KARSH
Frederick Alexander BROWN	Andrew Graham KNIEWASSER
Horace BOVIN, E.D.	Jean C. LALLEMAND
Joseph Le Mesurier CARTER	Lieutenant-Colonel the Reverend Sidney E. LAMBERT, O.B.E.
William CHAMN, M.C., M.D.	Maurice LEBEL
James Alfred CHURCHILL, C.D.	Robert Ferguson LEGGET
Robert (Harry) COHEN	Monique LEYRAC (Mme Jean DALMAIN)
John A. DUNN, O.B.E., M.C.	Lieutenant-Colonel the Honourable J. Keiller MACKAY, D.S.O., V.D., Q.C.
John (Robert) CRAIGIE	Reverend Father Noël MAILLOUX
William DE LORNE	Pauline M. (Mrs. Donald W.) MCGIBBON
Alice Vibert DOUGLAS, M.B.E.	Lieutenant-General Robert W. MONCEL, D.S.O., O.B.E., C.D.
Edouard Fiset	Gilbert C. MONTURE, O.B.E.
William FISHER	Aline (Mme Hector) PERRIER
John Keith FORBES	John Erskine READ, Q.C.
Helia FRANCA (Mrs. James MORTON)	G. Dale REDIKER
Charles-E. GAUTHIER	Roger Nantel SÉGUIN
Bobby GIMBY	Gordon Merriitt SHRUM, O.B.E., M.M., E.D.
Lieutenant-General Howard Douglas GRAHAM, C.B.E., D.S.O., E.D., C.D., Q.C.	Frank UNDERHILL
Nancy Catherine GREENE	Charlotte Elizabeth WHITTON, C.B.E.
Brigadier the Honourable Milton Fowler GREGG, V.C., P.C., C.B.E., M.C., E.D.	Francis George WINSPEAR
Hugh J. HEASLEY, D.S.O., V.D.	

On June 30, 1968, the Governor General, in his capacity as Chancellor and Principal Companion of the Order of Canada, appointed the following:—

To be a Companion of the Order of Canada

Honourable Ivan C. RAND, Q.C.

On June 28, 1968, the Governor General, in his capacity as Chancellor and Principal Companion of the Order of Canada, appointed the following:—

To be Companions of the Order of Canada

General Jean-V. ALLARD, C.B.E., D.S.O., E.D., C.D.	Gerhard HERZBERG
James A. CORRY	His Eminence Cardinal Paul-Émile LÉGER
Donald GORDON, C.M.G.	Jean-Paul LEMIEUX
Duncan A. GRAHAM, C.B.E., M.D.	Hector B. McKINNON, C.M.G.
Anne HÉBERT	Right Honourable Lester B. PEARSON, P.C., O.B.E.
Arnold D. P. HEENEY, Q.C.	Louis RASMINSKY, C.B.E.

To Receive the Medal of Service of the Order of Canada

A. Foster BAIRD	Lawrence E. KIRK
Murray L. BARR, M.D.	Eveline LEBLANC
Alan B. BEDDOE, O.B.E.	Raymond-U. LEMIEUX
Arthur S. BOURINOT	Norman McLAREN
Elsinore BURNS	Honourable James C. McRUER, Q.C.
Paul DAVID, M.D.	Monsignor Athol MURRAY
Kathleen FENWICK	Frederick J. NEY, M.C.
Alice GIRARD	Vera PERLIN
Ruth GORMAN	Monseigneur Félix-Antoine SAVARD
Donald W. GULLETT, D.D.S.	Ethlyn TRAPP, M.D.
Frank H. HALL	Honourable Thomas TREMBLAY, Q.C.
Walter B. HERBERT	

On Dec. 20, 1968, the Governor General, in his capacity as Chancellor and Principal Companion of the Order of Canada, appointed the following:—

To be Companions of the Order of Canada

Eric R. ARTHUR	Diamond JENNESS
William BOYD, M.D.	Arthur R. M. LOWER
Robert B. BRYCE	Gordon R. MCGREGOR, O.B.E., D.F.C.
Robert CHOQUETTE	J.-Alphonse OUMET
General Charles FOULKES, C.B., C.B.E., D.S.O., C.D.	Christopher PLUMMER
Roger GAUDRY	Hans SELYE, M.D.
	Jon VICKERS

To Receive the Medal of Service of the Order of Canada

Louis ARCHAMBAULT	Audrey JAKEMAN
James H. BIGGAR	Watson KIRKCONNELL
George D. W. CAMERON, M.C., M.D.	George KLEIN, M.B.E.
Jean PAPINEAU-COUTURE	Félix LECLERC
Clennell H. DICKINS, O.B.E., D.F.C.	Gweneth LLOYD
Clarence B. FARRAR, M.D.	Donald M. LOWE
Eugene FORSEY	Claude MÉLANÇON
Honourable Percival H. GORDON, C.B.E., Q.C.	Elizabeth H. MORTON
Pierre GRONDIN, M.D.	Reverend Frederick A. W. PEACOCK
William F. HANNA, C.B.E.	Brigadier-General John H. PRICE, O.B.E., M.C., E.D.
Norman A. HESLER	Harold B. TOWN
Lotta HITSCHMANOVA	Irena UNGAR
Helen HOGG	

PART V.—FEDERAL LEGISLATION, 1968-69

Legislation passed in the First Session of the Twenty-eighth Parliament from the date of opening, Sept. 12, 1968, to Apr. 30, 1969, the date of going to press with this volume, is outlined in the following statement. Naturally in summarizing material of this kind it is not possible to convey the full implication of the legislation. The reader who is interested in any specific Act is referred to the *Statutes of Canada* in the given volume and chapter.

Legislation of the First Session of the Twenty-eighth Parliament,
Sept. 12, 1968 to Apr. 30, 1969*

Subject, Chapter and Date of Assent	Synopsis
17 ELIZ. II	
Agriculture— 1968	
6 Nov. 14	<i>An Act to amend the Farm Credit Act</i> broadens the classes of persons who may be eligible for loans under the Act; increases the amount of the capital of the Farm Credit Corporation; provides for flexibility in the fixing of interest rates on loans; and makes certain administrative changes.
7 Nov. 14	<i>An Act to amend the Farm Improvement Loans Act</i> extends the loan period by three years; provides for flexibility in establishment of interest rates on loans; increases the maximum amount of any loan and extends the purposes for which loans may be made; raises the aggregate total of guaranteed loans that may be made; increases the limit of federal liability in respect of loans made by individual lenders; and makes certain administrative changes.
8 Nov. 8	<i>An Act to amend the Prairie Grain Advance Payments Act</i> increases the maximum amount of advance payment that may be obtained by a producer during a crop year; doubles the rate at which advance payments are calculated; permits the calculation of advance payments on grain deliverable under unit quotas; and makes other related amendments.
1969	
16 Feb. 13	<i>An Act to amend the Prairie Grain Advance Payments Act</i> provides emergency advance payments to grain producers to meet the costs of drying damp or tough grain during the 1968-69 crop year.
24 Mar. 28	<i>An Act to amend the Animal Contagious Diseases Act</i> removes from the Act the specified compensation for horses and cattle slaughtered pursuant to the Act and permits such amounts to be prescribed by the Governor in Council; it also provides for appeal by owners of animals slaughtered where no compensation or less compensation than the maximum prescribed is awarded.
32 May 8	<i>Farm Machinery Syndicates Credit Act</i> broadens the purposes for which loans may be made and the terms under which they may be made; increases the maximum loan that may be made to one farm syndicate; extends the loan-terms.
34 May 8	<i>The Pesticide Residue Compensation Act</i> provides for compensation to be paid to farmers whose agricultural products are contaminated by pesticide residue and also for appeals from compensation awards.
35 May 8	<i>The Plant Quarantine Act</i> introduces inspection and treatment measures to prevent the introduction or spreading of pests injurious to plants and provides for compensation for matter destroyed or prohibited or restricted from sale and for appeals from compensation awards.
Finance— 1968	
7 Oct. 3	<i>Appropriation Act No. 3, 1968</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1969.
12 Dec. 19	<i>Appropriation Act No. 4, 1968</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1969.
1969	
23 Mar. 11	<i>Appropriation Act No. 1, 1969</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1969.
25 Mar. 28	<i>Appropriation Act No. 2, 1969</i> grants certain sums of money for the public service for the financial year ending Mar. 31, 1970.

*The First Session continued beyond this date.

**Legislation of the First Session of the Twenty-eighth Parliament,
Sept. 12, 1968 to Apr. 30, 1969—continued**

Subject, Chapter and Date of Assent	Synopsis
Finance—concl. 1969	
26 Mar. 28	<i>An Act to amend the Bretton Woods Agreement Act and the Currency, Mint and Exchange Fund Act</i> enables Canada to participate in a new arrangement in the International Monetary Fund to create new reserve assets to supplement gold and reserve currencies in the participating countries' foreign exchange reserves and effect certain administrative and operational changes in the structure of the Fund. The amendment to the Currency, Mint and Exchange Fund Act permits the Fund Account to receive, hold and sell the new reserve assets.
Fisheries— 1969	
20 Feb. 27	<i>An Act to amend the Fisheries Improvement Loans Act</i> increases the number of lending institutions; makes more flexible the fixing of the interest rate at which money may be made available to fishermen; and increases the federal liability in respect of loans made by individual lenders to encourage lending by small-volume lenders.
21 Feb. 27	<i>The Freshwater Fish Marketing Act</i> is an Act to regulate interprovincial and export trade in freshwater fish and to establish the Freshwater Fish Marketing Corporation for the purpose of marketing and trading in fish, fish products and by-products in and out of Canada.
Government— 1968	
2 Oct. 3	<i>An Act to amend the Publication of Statutes Act</i> authorizes the Governor in Council to prescribe the form to be used in the printing of the annual Statutes and the manner in which they are to be bound; the style shall correspond as closely as possible to that used for the Revised Statutes.
5 Oct. 31	<i>An Act to amend the Post Office Act</i> increases by one cent the postage rates for letters posted in Canada for delivery anywhere in Canada; provides an amended rate structure for newspapers and periodicals; provides for certain changes in connection with the administration of the Act, especially in relation to tenders and contracts; and provides for the discontinuance of the Post Office Savings Bank.
1969	
27 Mar. 28	<i>An Act to amend the Financial Administration Act</i> abolishes the office of Comptroller of the Treasury, the control functions of which are transferred to departments, making them fully responsible for their own financial management; transfers statutory responsibilities, other than those transferred to departments, to the Receiver General; and makes other changes in consequence thereof. Other amendments concern "public property" and the assignment of debts due the Crown under labour and material payment bonds.
28 Mar. 28	<i>The Government Organization Act, 1969</i> establishes new departments and agencies of government, abolishes or consolidates others, and re-arranges duties; the main purpose of the complex provisions of this Act is to eliminate duplication, to simplify administrative structures and to provide better service to the public.
29 Mar. 28	<i>The Statute Law (Superannuation) Amendment Act, 1969</i> is an Act to amend the Canadian Forces Superannuation Act, the Defence Services Pension Continuation Act, the Royal Canadian Mounted Police Superannuation Act, the Royal Canadian Mounted Police Pension Continuation Act and the Public Service Superannuation Act; the amendments deal mainly with administrative matters and removal of anomalies or inconsistencies, with some changes in benefits and increases in certain contribution rates.
Justice— 1968	
4 Oct. 23	<i>An Act to amend the Judges Act</i> provides salaries for three additional Ontario County Court judges and eleven additional Quebec Superior Court judges.
1969	
14 Feb. 13	<i>An Act to amend the Canada Evidence Act</i> modernizes the Act by facilitating the hearing of expert witnesses during trials; providing for more flexible cross-examination of the witnesses of one party; extending the definition of the word "bank" to financial institutions; revising the rules on hearsay; and providing a solution to the problems that formerly arose from the form recognized for receiving oaths or solemn declarations.
Revenue— 1968	
12 Dec. 19	<i>An Act to amend the Customs Tariff</i> gives effect to the Resolutions relating to the Customs Tariff tabled in the House of Commons on Oct. 22, 1968.

Legislation of the First Session of the Twenty-eighth Parliament,
Sept. 12, 1968 to Apr. 30, 1969—concluded

Synopsis

An Act to amend the Customs Act relates to the sale of abandoned goods; provides greater flexibility in the provisions governing the examination of imported goods at time of entry through Customs; and provides for refund of duty under certain circumstances.

An Act to amend the Income Tax Act and the Estate Tax Act revises the portions of these Acts relating to gifts.

The Anti-dumping Act provides for the imposition of duty on all goods entered into Canada which have been declared to have caused, are causing or are likely to cause material injury to the production in Canada of like goods; it also provides for the establishment of an Anti-dumping Tribunal as a court of record to investigate and report on charges of dumping.

An Act to amend the Export and Import Permits Act extends the duration of the Act for a further five years and adds the Canadian Dairy Commission to the Import Control Board under the Act to permit control of imports of any dairy products if necessary for the national interest.

An Act respecting the construction of a line of railway in the Province of Alberta by Canadian National Railway Company from the vicinity of Windfall on the Windfall Extension to the Soudo Subdivision of the Canadian National Railway in a westerly direction for a distance of approximately 51 miles to the Bigstone property of Pan American Petroleum Corporation and a connecting spur extending in a northerly direction for a distance of approximately 9 miles to the South Kaybob property of Hudson's Bay Oil & Gas Company Limited and its subsidiaries.

An Act to authorize the provision of moneys to meet certain capital expenditures of the Canadian National Railway Company for the period from the 1st day of January, 1968, to the 30th day of December, 1969, to be paid out of the moneys provided by Her Majesty in certain securities to be issued by the Canadian National Railway Company and by Air Canada.

An Act to amend the Aeronautics Act makes certain changes to improve the Act such as those relating to regulation of federal facilities and services; prohibiting or restricting navigation of aircraft over certain areas during certain periods of time; excluding hovercraft from the Act; permitting the issuance of temporary licences for commercial air services etc.

An Act to amend the Navigable Waters Protection Act brings the Act up to date, ensuring that navigable waters remain navigable for the larger ships and those of shallower draft which are in use today. Part I is concerned mainly with structures designed for specific purposes, Part II with underwater obstructions to navigation, and Part III with ferry cables and swinging bridges.

Miscellaneous—

The Precious Metals Marking Act concerns the marking of articles containing precious metals in accordance with quality standards provided in the regulations.

An Act to amend the Veterans' Loan Act provides for flexibility in establishing interest rates on loans and advances made to or in respect of veterans under the Act, and makes other changes in consequence thereof.

An Act to amend the Canadian Overseas Telecommunications Corporation Act removes certain limitations previously placed on the Directors, giving them greater powers and permitting more flexibility in the operations of the Corporation.

An Act to amend the Co-operative Credit Associations Act relaxes some of the restrictions previously included in the Act and grants some extensions of powers to the societies subject to it; the Canadian Co-operative Credit Society is enabled to carry out more fully the purposes originally intended for it and the provincial centrals are enabled to continue their sound and orderly development in the light of current conditions.

PART VI.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; and annually from that year in successive editions. A reprint entitled *Canadian Chronology, 1497-1960* is also available from the Dominion Bureau of Statistics. The following listing covers the period Apr. 1, 1968 to Apr. 30, 1969 and it should be mentioned that certain of the dates given therein are approximate. The publication *Canadian News Facts*, Toronto, has been very valuable in the preparation of this chronology. References regarding changes in federal and provincial legislatures or ministries are not included but may be found in Chapter II on Constitution and Government or in the Appendix.

1968

April: *Apr. 2*, Mayor Drapeau of Montreal announced the creation of a lottery-like scheme of raising money for city financial purposes, the first such scheme to be initiated in Canada. *Apr. 3*, The Fred W. Tanner Lecture Award of the Chicago branch of the U.S. Institute of Food Technology awarded to Dr. Frederick S. Thatcher, Food and Drug Directorate, Department of National Health and Welfare, Ottawa, the first Canadian to be so honoured. Announcement of the Federal Government policy of selling in the free market the gold purchased by the Royal Canadian Mint from Canadian producers; first sale concluded June 6. *Apr. 4*, Death in Memphis, Tennessee, of Negro civil rights leader and Nobel Peace Prize winner Dr. Martin Luther King, Jr., from an assassin's bullet; riots erupted in many cities throughout the U.S. as a result. *Apr. 4-6*, National Liberal convention held in Ottawa; Hon. Pierre Elliott Trudeau elected leader, succeeding Rt. Hon. Lester B. Pearson; assumed office as Prime Minister *Apr. 20*. *Apr. 5*, The Cunard liner *Queen Elizabeth* sold to U.S. interests, to be moored in the Delaware River and used as a conference centre and airport hotel. Nancy Greene of Rossland, B.C., successfully defended her World Cup championship in women's international skiing for the second consecutive year. *Apr. 15*, The U.S.S.R. reported the successful link-up of two unmanned space ships. *Apr. 16*, Yvon Dupuis, former federal Cabinet Minister, acquitted in Montreal at a second trial on a charge of influence-peddling first laid in 1965. *Apr. 19*, Canadian-American expedition headed by Ralph Plaisted of St. Paul, Minnesota, reached the North Pole, travelling by snowmobile, the first surface-travelling party to do so since the 1909 Peary expedition. *Apr. 22*, The Logan Medal, top award of the Geological Association of Canada, awarded to Prof. John Tuzo Wilson for outstanding contributions as an earth scientist and teacher. Settlement reached in six-day strike of more than 11,400 workers against Ford Motor Co. of Canada Ltd.; wage parity with American Ford workers by 1970 and fringe benefits granted. *Apr. 23*, Dissolution of 27th Parliament; general election called for June 25. Dr. Robert Grierson, a United Church missionary, posthumously honoured in Toronto by the South Korean Government for his role in helping the country gain its independence; the Canadian Order of Merit was presented to his widow. *Apr. 24*, Death of John Ambrose O'Brien in Ottawa, one of the founders of the Montreal Canadiens in 1909 and of the National Hockey Association, forerunner of the National Hockey League. *Apr. 25*, Compilation of all rulings of the Speaker of the House of Commons for the past 100 years completed as a centennial project by Maxime Guitard, House of Commons Clerk of Committees. *Apr. 26*, The Federal Government announced a long-term interest-free loan for construction of a major electric transmission system in Ghana, Togo and Dahomey, the largest project undertaken

by Canada in its aid programs for Africa. *Apr. 27*, Arrests and counter demonstrations resulted from anti-Viet-Nam War protests in Toronto, Ottawa, Montreal and Edmonton.

May: Dean T. L. Jones, Ontario Veterinary College, University of Guelph, awarded the American Veterinary Medical Association award for 1968. Prof. James P. Kutney, University of British Columbia, awarded the 1968 prize of the Chemical Institute of Canada for distinguished work in organic or biochemistry. Don W. Thomson, Ottawa author and former civil servant, elected a fellow of the Royal Geographical Society of London. *May 2*, The 1967 Governor General's literary awards presented to Eli Mandel (poetry in English) and Alden Nowlan (poetry in English); Norah Storey (non-fiction in English); Jacques Godbout (fiction in French); Robert-Lionel Séguin (non-fiction in French); and Françoise Loranger (French theatre). Award of the 1967 Stephen Leacock Memorial Medal to Max Ferguson for his book *And Now, Here's Max*. *May 3*, The Canadian Ambassador to France delivered a note to the French Government in Paris, believed to be a low-key protest over the treatment of Quebec as an equal of the independent states at the international education conference held in Paris *Apr. 22-26*, which was attended by Quebec Education Minister Cardinal and bypassed relations with the Canadian Government. *May 7*, Death in Toronto of John McClelland, founder and former president of the publishing firm of McClelland and Stewart Ltd., at age 91. *May 9*, Appointment of the Rt. Hon. Lester B. Pearson as a professor of international affairs announced by Carleton University, Ottawa. *May 9-10*, President Habib Bourguiba of Tunisia on state visit to Ottawa. *May 11*, Six-mile extensions to the Toronto subway system began operations, bringing the total length to 21 miles. A strike by about 4,500 lumber workers in the British Columbia interior, begun Oct. 4, 1967, ended in acceptance of a contract including pay raises of 72 cents an hour. Montreal Canadiens won the Stanley Cup, symbol of hockey supremacy, over the St. Louis Blues, 4 games to 0. Lt-Col. J. W. Watson of Toronto, an Attaché at the Canadian Embassy in Moscow, and his wife injured when man-handled by U.S.S.R. security forces aboard a trans-Siberian train; left to return to Canada *May 24*; in retaliation, a military attaché at the Soviet Embassy in Ottawa was directed to leave Canada. *May 12*, Death of Blair Fraser, Ottawa editor of Maclean's Magazine and distinguished author and radio and television personality, by drowning while on a canoe trip in Algonquin Park. *May 13-24*, Federal Government announced loans from West German, United States and Italian sources to a total of \$262,400,000 (U.S.) to increase its cash reserves, permit repayment to the Federal Reserve Board and lengthen its foreign debt obligations. *May 14*, Canada's tallest building, the 56-storey Toronto-Dominion Centre in downtown Toronto, officially

opened. Death in Aylmer, Que., of Mrs. Arthur Dillon Croker Cummins, former Montreal lawyer, writer and lecturer who was a founder and first president of the Business and Professional Women's Club of Canada. *May 16*, Manitoba's \$1,500,000 centennial planetarium officially opened in Winnipeg. *May 17*, Opening of Man and His World on the site of Expo 67, Montreal. *May 18*, McIntosh, Saint John, N.B., appointed to the Board of Governors of St. Francis Xavier University at Antigonish, N.S., the first under-graduate of a Canadian university to be so appointed. *May 21*, Dr. C. J. Mackenzie, Chancellor of the University of Toronto and former president of the Atomic Energy Research Council and of Atomic Energy Ltd., named second recipient of the Bank Award for outstanding contribution to human welfare and common good. *May 22*, Report of the Royal Commission on the Development and Prospects of Newfoundland published Dec. 11, 1964, tabled in the House of Commons. *May 23*, The Rt. Hon. Lester B. Pearson received the BBC's highest honour, an invitation to deliver the annual Reith series of six 30-minute radio talks on the state of knowledge. *May 24*, The U.S. Embassy at Quebec City damaged by bomb explosion following peaceful demonstrations against the war in Viet-Nam. Construction of the \$66,200,000 Montreal headquarters building for the CBC, to be completed by *May 27*, Award of a National Film Institute franchise to Montreal announced; the franchise is now known as the Expos. *May 28*, The Governor General awarded the Massey Medal for Architecture awarded annually to former Governor General Vincent Massey by the Royal Architectural Institute of Canada in recognition of his distinguished service to architecture, the arts and to Canada. *May 30*, Greene, world champion skier, of Rossland, B.C., named "minister extraordinary" to the Columbia Government, the position to which he was appointed for his leadership in the field of tourist promotion. *June 1*, Senator Charles Gavan (Chubby) Power, after an unbroken parliamentary career since 1917, Mrs. Venetia Barrette, first winner of the \$100,000 grand prize in the "voluntary tax" scheme, named first Chairman of the Municipality of Ottawa-Carleton on Jan. 1, 1969. Mr. Justice John McKeown, former Court Judge in Yukon Territory, named Chairman of the newly created Manitoba Mediation Commission, for a seven years. *May 31*, Canada's first heart operation performed in Montreal Heart Dr. Pierre Grondin.

June 1, The Canadian Mission ship, *Lady Grenfell*, arrived in St. John's, Nfld., ending the Mission's 100th anniversary services to northern Newfoundland and Labrador begun in 1892. *June 1*, Death in Easton, Conn., of Helen Keller, internationally renowned author who overcame blindness to become an inspiration to the blind. *June 2*, Death in Ottawa of André Laurendeau, former chairman of the Royal Commission on Bilingualism and Biculturalism and Editor-in-Chief of the Montreal newspaper *Le Devoir*. *June 2*, Death at Resolute Bay, N.W.T., of Idlout, Eskimo leader and spokesman for his people; he was the central figure in the book *Land of the Long Day* and in a film of the same name, and was decorated by H.M. Queen Elizabeth II for his services as an Eskimo leader. *June 3*, The Federal Government announced the issuance of nickel coinage replacing the present silver coinage, to begin in August. *June 6*, Death in Los Angeles of Senator Robert F. Kennedy, brother of the late U.S.

President John F. Kennedy, from an assassin's bullet. *June 7*, The students' council at Simon Fraser University, after more than a week of demonstrations that forced the resignation of two presidents, voted to create a committee to work with a similar faculty committee to search for an acting president; Dr. Archibald MacPherson, Dean of Arts, given a vote of confidence June 11, and Dr. Kenneth Strand became Acting President Aug. 1, after acceding to student demands for greater voice in the government of the university. *June 8*, The home of Stephen Leacock near Orillia, Ont., officially marked as a national monument. *June 8*, Arrest in London, Eng., of James Earl Ray, suspect in the assassination of Dr. Martin Luther King, following investigation by RCMP that indicated he was travelling on a Canadian passport. *June 9*, Debate by leaders of Canadian political parties televised for the first time. *June 10*, Voters in Montreal's suburban St. Leonard elected members of the Catholic school commission pledged to force all children of non-English immigrants to attend French-language schools. *June 11*, Premier Johnson of Quebec stated that the provincial policies involving language and religion cannot be upset by local referendums or elections of school board officials; urged maintenance of the *status quo* until the provincial government announces its long-term policy for all Quebec schools. *June 12*, Report of the committee established June 10, 1965, to study the education system in Ontario, under the co-chairmanship of Mr. Justice Emmett Hall and Lloyd A. Dennis, tabled in the Legislature; recommendations included the abolition of grades, percentage marks, school subjects as now known, corporal punishment, and the organization of learning around general areas such as communications, environmental studies and the humanities. The General Assembly of the UN approved a draft treaty to ban the spread of nuclear weapons, regarded by its sponsors, Canada among them, as a major step toward world peace. *June 13*, Report of the Quebec La Haye Commission, established in 1963 to study all aspects of urbanization, made public; recommended re-organization of the municipal affairs department, appointment of an urban affairs expert and a five-year plan to deal with housing, studies on re-grouping of municipalities, etc. The Metropolitan Toronto and Region Transportation Study, prepared as a basis for a long-term transportation policy for the area around Toronto, bounded by Oshawa, Hamilton, Barrie and Guelph, completed; recommendations included the development of requirements to fill the needs of the population expected to double by the year 2000. *June 17*, Dr. W. Kaye Lamb, Dominion Archivist and National Librarian, presented with the Eastman Kodak Information Technology Award for outstanding contributions to advancement of the science of information technology, the first Canadian to be so honoured. *June 22*, Strike action begun in Toronto by 3,700 Metro outside workers including garbage collectors, and by 300 brewery workers; and in Montreal by 1,200 employees of the St. Lawrence Seaway Authority. *June 23*, Wage parity with U.S. auto workers assured workers at the American Motors Canada Ltd. plant at Brampton, Ont., under a 16-month contract. *June 24*, Sandra Post, Oakville, Ont., became the first rookie and first foreign player to win the U.S. Ladies' Professional Golf Association championship. Threatened locomotive firemen's strike averted by federal Labour Minister Pepin by order to reconvene the conciliation board; agreement reached providing for pay increase July 3. More than 290 persons were arrested and 130 injured, including 43 policemen, during St. Jean Baptiste Day riots in Montreal; 450 criminal charges laid against 210 demonstrators on June 25; CBC reporter Claude-Jean Devireux was suspended for his broadcasts on the affair, resulting in refusal of other CBC reporters to carry on and the consequent blackout of CBC French-language coverage of the federal election on June

25. June 25, Twenty-eighth General Election; Liberal government under Pierre Elliott Trudeau returned to office; party standing—155 Liberal, 72 Progressive Conservative, 22 New Democratic Party, 14 Ralliement Creditiste and 1 Independent.
June 28, Official opening of the 62-storey, 626-foot Husky Tower in downtown Calgary, claimed to be the tallest structure of its kind in North America.
June 29, Strike of 5,700 workers at Massey-Ferguson Industries Ltd. in Toronto and Brantford, begun Apr. 19, ended in acceptance of a three-year contract giving wage increases but not parity with U.S. counterparts.

July: Dr. C. J. Mackenzie, former President of the National Research Council and Atomic Energy of Canada Ltd., made an honorary member of the Institution of Civil Engineers, London, Eng.
July 1, On Parliament Hill, Governor General Michener unveiled a bronze statue of former Prime Minister W. L. Mackenzie King, the work of Quebec sculptor Raoul Hunter. The U.S. and the U.S.S.R. signed the nuclear non-proliferation treaty and agreed to open joint discussions on the limitations of offensive nuclear missiles and anti-missile systems; Canada signed the treaty in Moscow, London and Washington on July 22 and, on Jan. 8, 1969, was the sixth of the 80 countries concerned to ratify the agreement. A new long-distance telephone service was placed in operation connecting ships on the high seas and in coastal waters with the Canadian land network.
July 3, Sunday horse racing legalized in Ontario by the passing of a Bill in the Legislature.
July 4, Offices of the Canadian Consulate General in New York damaged by an explosion.
July 6, Legislation passed in Quebec authorized Sidbec, a provincial government agency, to develop an integrated steel enterprise and to purchase the outstanding shares of the Dominion Steel and Coal Corp. Ltd.; management of the latter corporation was taken over by Sidbec on Dec. 26, 1968. A \$10,000,000 damage suit brought in 1964 on behalf of eight thalidomide babies in Ontario settled out of court and money placed in trust for each of the children until reaching the age of 21.
July 9, NRC astronomers announced the first detection of radio signals from recently discovered X-ray stars, a discovery expected to give vital clues to the life and death processes of stars and the universe.
July 10, The Roman Catholic School Board of St. Leonard agreed to limited English-language instruction. Minimum wage increases announced in Quebec (to \$1.25 in the Montreal area and \$1.15 elsewhere) and in Saskatchewan (to \$1.05 in the cities and 95 cents in rural areas). The George Armstrong Peters prize from the University of Toronto awarded to Dr. Walter P. Bobechko, paediatric orthopaedic surgeon at the Hospital for Sick Children, for original research into the transplanting of cartilage from healthy joints to heal crippled knees or hips through delaying rejection of transplanted tissue.
July 11, Presidents of 40 universities met in Ottawa to discuss unrest on campuses across Canada.
July 13, The Rt. Hon. John G. Diefenbaker presided at the unveiling of a monument to Sir John A. Macdonald, Canada's first Prime Minister, at the Macdonald ancestral home in Sutherland City, Scotland.
July 14, Seaway workers ratified a compromise settlement giving them a 19-p.c. wage increase over three years, ending a 24-day strike that cost the Seaway Authority \$96,000 a day in lost tolls, the workers \$34,000 a day in lost wages and shipowners \$300,000 a day to maintain idle ships.
July 15, Announcement of retirement of the "Newfie Bullet", the slow train between St. John's and Fort aux Basques, Nfld., on Apr. 15, 1969, to be replaced by modern, air-conditioned buses.
July 16, Death in Ottawa of Norman A. Robertson, former Under Secretary of State, High Commissioner of Canada to Britain, Ambassador to the United States and chief negotiator for Canada

during tariff-cutting talks among the world's industrial nations at Geneva before heading a new School of Graduate Studies in International Affairs at Carleton University, Ottawa.
July 17, Rt. Hon. Lester B. Pearson elected President of the Institute for Strategic Studies, a London-based defence and disarmament research centre. The 27-day strike and lockout in Ontario's brewing industry ended; 2,700 workers accepted a contract involving increases in wages.
July 18, Official opening in Vancouver of the Bank of British Columbia, Canada's tenth federally chartered bank. The first volume of the report of the Royal Commission on Pilotage, appointed Nov. 2, 1962, released; recommendations include the establishment of a Crown corporation to organize and control the shipping function, and a complete overhaul in the organization and control of shipping pilots.
July 18 - Aug. 9, Nation-wide strike of 24,000 postal workers; mediation conducted by Judge René Lippé resulted in wage increases, an improved rate of progression to top salary level for clerks and letter carriers, improved overtime provisions and an additional two paid statutory holidays; in Montreal, mail service was further delayed until Aug. 13 when truck drivers under contract struck for pay lost during the 22-day postal strike.
July 20, A tornado at LaRivière, Man., caused an estimated \$1,000,000 damage.
July 22, Historic Basilica at St. Boniface, Man., gutted by \$2,500,000 fire which destroyed irreplaceable items representing early Western Canada history, only a week after celebrations commemorating the 150th anniversary of the founding of St. Boniface.
July 24, Finance Minister Benson announced extension of a series of guidelines to prevent U.S. capital passing through Canada to foreign countries, in effect since May 3, a further step in fulfilling an agreement made Mar. 7 when Canada was given exemption from U.S. restrictions on capital exports.
July 28, Death in Nanaimo of Colin Cameron, M.P. for Nanaimo-Cowichan-The Islands.
July 31, Wage increases offered to 800 United Auto Workers by Canadian Car Co. in Fort William, Ont., accepted by workers on strike since July 3.

August: Scientists of the Geological Survey discovered a new mineral near Montreal, named *veloganite* in honour of Sir William E. Logan, founder and first Director of the Geological Survey of Canada.
Aug. 1-8, Ninth annual Provincial Premiers' Conference held at Waskesiu, Sask., attended by Premiers of all provinces except Newfoundland, Quebec and British Columbia; a firmer approach to the subjects of education, health, pollution and urban growth was taken, and the Federal Government was requested to convene a federal-provincial conference to revise present financial agreements.
Aug. 2, Announcement of the establishment of a three-member "task force" to study amateur and professional sports development and assistance, and the role of the Federal Government in this area.
Aug. 3, Announcement of Federal Government plans to build a new international airport near Montreal and expand the Toronto International Airport at a cost of about \$600,000,000. In possibly the first operation of its kind, a surgical team headed by Dr. André Gilbert at Quebec, Que., successfully carried out a kneecap transplant.
Aug. 12, Death in Lunenburg, N.S., of Captain Angus Walters, renowned skipper of the racing fishing schooner *Bluenose*, at age 87.
Aug. 13, Inauguration by General Jean-V. Allard of the third link of the Canadian Switched Network telephone system at the \$2,000,000 communications complex at Smith Falls, Ont., extending the network previously in operation at Fredericton, N.B., and Sherbrooke, Que.; this system constitutes the greatest advance in telephone technology since the introduction of the dial telephone in the 1920s; its main use at present is in air defence.
Aug. 16, Transport

Minister Hellyer announced that, as the minister responsible for housing, he would head a task force to hold hearings in about 25 cities across Canada to seek solutions to the housing crisis. More stringent penalties against drinking drivers went into effect in 1968; penalties include automatic loss of licence for six months on a first conviction for drinking and driving and of one year for drunk driving. The stock of Air Canada extended by the acquisition of 40 p.c. of the stock of Air Jamaica Ltd.

Proclamation of Ontario's Moosonee Area Board Act transformed the mainly Indian community of 1,500 in James Bay into Canada's first northern municipality. Aug. 19,

B. Pearson appointed to head a bank international commission of experts to study and chart the future of economic aid to developing nations. A strike that threatened to shut down the planes was averted when a settlement gave wage increases and other benefits. Aug. 20, Announcement of the

Canadian Institute of Indian Studies to promote a better understanding of Indian life among Canada's academic community, known as The Shastri Indo-Canadian Institute in honour of the late Indian Prime Minister Lal Bahadur Shastri; head office to be at McGill University. Aug. 21, The Post Office Department announced the closing of the Post Office Savings Banks, a service initiated 100 years ago. Banking facilities were not available in the areas where Russian troops invaded Czechoslovakia.

Leaders, among them Alexander Shirov, denounced the act as a violation of the UN Charter. Death in the Guevreumont, well-known Canadian writer. Aug. 24, France exploded a hydrogen bomb at a test centre in the Pacific. Aug. 29, The Federal Government announced the cancellation, due to financial difficulties, of the \$22,000,000 project to build a new bridge in British Columbia.

Constructed in commemoration of the 1964 visit to Canada of H.M. Queen Elizabeth II. Robert Baird McClure, medical missionary, was the first layman Moderator of the United Church of Canada. World champion skier Nancy Greene became a member of the Sports Hall of Fame; also awarded the Lou Marsh Trophy as the best Canadian athlete of the year.

Prime Minister Trudeau announced the cancellation of the winter works program, begun in 1967 and costing about \$321,000,000 since then, with a view to introducing more productive programs. Aug. 31, Announcement of the formation of a five-man task force to study and report on federal information services at home and abroad.

The first International Conference of Ministers responsible for Social Welfare held in New York under UN auspices; 94 nations, including Canada, represented. Canadian photographer Robert R. Taylor's book *Japan in Color* selected from 26 countries as "the world's finest book" and awarded a gold medal by the International Book Fair at Leipzig, East Germany. Sept. 1, Strike of 2,000 employees begun May 3 at the Goodyear Tire and Rubber Co. of Canada plant in Toronto ended in a new three-year contract giving an increase of about \$1.05 an hour in wages as well as other benefits. Sept. 3, Postal rate increases announced by Postmaster General Kilbride, effective Nov. 1, 1969; the Bill received Royal Assent on Oct. 31. Sept. 5, Fifth Annual Review of the Economic Council of Canada made public, recommending comprehensive measures to eliminate poverty. Report of the Ontario Royal Commission of Inquiry into labour-management relations, established under Mr. Justice Ivan C. Rand in August 1966, released; it recommends that an 11-man tribunal with powers to control

picketing and terminate strikes be created, that the right of public employees to strike be denied, and that unions be made legal entities. Sept. 6, Swaziland became an independent nation, ending 350 years of the British Empire in Africa. Sept. 6-8, Prime Minister Hugh Shearer of Jamaica in Ottawa for talks with Canadian leaders. Sept. 8, Birthplace of Col. John McCrae, composer of *In Flanders Fields*, near Guelph, officially opened as a historic site. The first Czechoslovakian refugees from the Aug. 21 invasion of their country by Soviet troops arrived in Canada under a special four-month federal program during which time 10,000 to 11,000 Czechoslovakians came to Canada at a cost to the Federal Government of \$8,000,000 to \$10,000,000. Sept. 9, Canada Council Molson Prizes for outstanding achievement in the arts, social sciences and humanities for 1968 presented to Glen Gould, pianist, and Jean Le Moyne, writer. Dr. Patrick McTaggart-Cowan, former President of Simon Fraser University, appointed Principal Scientific Adviser to the Federal Cabinet. Sept. 11, An Exchequer Court judgment ruled the Federal Government wholly liable because of negligence for the collision of two freighters in the St. Lawrence River in which three persons were killed and a West German freighter sunk, and placed, for the first time, "an unqualified duty" on the Crown to ensure that navigational aids on Canadian waterways are fulfilling their intended purposes. An Air Canada plane on a flight from Moncton, N.B., was ordered to Cuba by Charles Lavern Beasley of Dallas, Texas, the first such incident in Canada; during refuelling he was arrested, and arraigned on eight charges; found guilty and sentenced Dec. 10 to six years in penitentiary. Sept. 11-12, Visit of Philippe Rossillon, a member of the staff of Premier Maurice Couve de Murville of France, to the Red River Valley French Canadian Cultural Association in Manitoba denounced by Prime Minister Trudeau who told the House of Commons that the Department of External Affairs had registered its disapproval with the French Ambassador to Canada; the visit was claimed to be unofficial. Sept. 12, The eight-week strike of Lakehead grain handlers ended in agreement on a wage increase of \$1.05 an hour over three years and arbitration of other issues. In a further development in the St. Leonard school dispute, thousands of English-speaking parents protested on Parliament Hill against the plans to give French-only instruction in the elementary schools. Sept. 15, Celebration of the Centennial of the Medical School of Dalhousie University, Halifax, N.S. Sept. 17, Dr. Bruce Chown of Winnipeg awarded the \$25,000 Gairdner Foundation Award of Merit in medical science for 1968 in recognition of his contributions to the knowledge of human blood groups. Sept. 18, The Halifax-based destroyer HMCS *Ottawa* became the first Canadian naval ship to have a predominantly French-speaking crew. Sept. 20, Death at Woodbridge, Ont., of J. Grant Glasco, formerly Chairman of the Royal Commission on Government Reorganization. Scientific research project involving the development of a \$150,000,000 intense neutron generator (ING) cancelled by the Federal Government in its effort to cut expenditures. Sept. 24, A judicial inquiry into the behaviour of Toronto Magistrates Frederick J. Bannon and George Gardhouse found the former unfit due to his association with a known ex-convict with whom he discussed cases coming up before the court, and the latter of indiscretion in similar matters. Sept. 25, Canada elected as one of the 17 Vice-Presidents of the 125-nation UN General Assembly. Sept. 25, The *Family Herald*, a weekly paper of specific interest to farmers, ceased publication after 99 years. Death in Manicouagan, Que., of Premier Daniel Johnson of Quebec; Jean-Jacques Bertrand chosen his successor on Oct. 2. Sept. 27, Premier E. C. Manning of Alberta announced his intention to retire after serving as Premier for 25 uninterrupted years.

Postmaster General Kierans announced the discontinuance of Saturday mail delivery and the closing of Post Offices on Saturday, effective Feb. 1, 1969. *Sept. 28*, The Dr. Gordon M. Shrum Powerhouse of the \$485,000,000 Peace River hydro-electric project formally opened by Premier Bennett at Hudson Hope, B.C. *Sept. 29*, A memorial to Richard Rowland Thompson, the only Canadian awarded the Queen's Scarf for bravery in the Boer War 1899-1902, unveiled at Chelsea, Que.

October: *Oct. 1*, Following a unique operation performed by a team headed by Dr. Fouad A. Hamdi, Chief of Neurosurgery at Royal Jubilee Hospital, Victoria, B.C., a patient left the hospital fitted with a stainless steel vertebra. *Oct. 2*, A statue of Louis Riel, a metis leader who was hanged for treason in 1885 when his rebellion on behalf of the French-speaking metis on the prairies failed, unveiled in Regina by Prime Minister Trudeau. *Oct. 3*, The Lord Melchett Medal and Scroll, the highest international award in its field, presented to Alex Ignatieff, Deputy Director of the Mines Branch, Department of Energy, Mines and Resources, by the British Institute of Fuel, for his outstanding work in the field of fuel science and technology, the first Canadian to have been so honoured. In an unprecedented policing move, the CRTC cancelled the licence of CJLS radio station in Yarmouth, N.S., because of violation of program standards. *Oct. 4*, Farmers from southern and southwestern Ontario demonstrated on Parliament Hill in protest against the decline in the price of corn and in support of further negotiations with the Federal Government. *Oct. 6*, Members of Parliament David MacDonald and Andrew Brevin reported their observations of starvation and destruction in Biafra, in sharp contrast to those reported by a military team of observers from various countries that did not support their findings; Canada later obtained permission from the Nigerian Government to fly relief supplies to Biafra for the International Red Cross. *Oct. 7*, Students occupied Lionel Groulx College in Ste. Thérèse, beginning a series of student occupations in other such institutions in Quebec in support of their demands for better preparation for the job market, for a second French-language university in Montreal and for a government program of economic planning to create more jobs; by *Oct. 28* all colleges were open, some under restrictions including shorter Christmas holidays and the abolition of student "study sessions" during class hours. *Oct. 9*, Canada reaffirmed its adherence to the principles of the UN Charter and announced an increase in its contribution to the UN development program from \$10,000,000 to \$12,500,000. Acadia University, Wolfville, N.S., announced the formation of a Canada-Commonwealth Caribbean Centre to act as a clearing house for West Indian information and for studying matters of interest to Canada and the Commonwealth Caribbean. *Oct. 11*, The U.S. State Department delivered to the Canadian Ambassador a cheque for \$52,100,000 in payment to British Columbia for flood-control benefits provided on the American portion of the Columbia River by the Arrow Lake dam, fully operational today. Death in Surrey, B.C., of Senator Thomas Reid. The Red River floodway project, constructed to avert flooding in the Winnipeg area, officially opened by Energy, Mines and Resources Minister Greene. *Oct. 11-15*, At a convention in Quebec, separatist organizations Mouvement pour la souveraineté nationale and the Ralliement national united to form one party, Le Parti Québécois, claiming a membership of 20,000. *Oct. 11-22*, U.S. spacecraft *Apollo 7*, carrying three astronauts, successfully carried out an 11-day, 163-orbit flight. *Oct. 14*, The CP-TCA No. 1112, the first aircraft owned by TCA, purchased for \$25,000 in October 1927, accepted by the Director

of the National Museum of Science and Technology, to be placed on permanent display. *Oct. 15*, Announcement in the House of Commons of the signing of a five-year agreement by Atomic Energy of Canada Ltd. and the Commissariat à l'Énergie Atomique of France to share nuclear data. Premier Bennett of British Columbia announced the repayment by the Province of Quebec of the \$100,000,000 loan advanced to that province by B.C. in September 1964. *Oct. 17*, The Ontario Government announced that the minimum wage in general industry would be raised to \$1.30 from \$1 an hour, and in the construction industry to \$1.55 from \$1.25, effective Jan. 1, 1969. *Oct. 18*, The Entomological Society of Canada Medal for 1968 awarded to Dr. William George Wellington of the Department of Zoology of the University of Toronto. *Oct. 22*, Canadian aircraft awaiting orders to fly relief supplies to Biafra received Nigerian clearance but not that of Biafra, or Equatorial Guinea. *Oct. 23*, Ontario Education Minister William Davis presented 40 specially bound volumes of historical biography to Edinburgh University in Edinburgh, Scotland, in commemoration of the 150th anniversary of the birth of Scottish-born journalist and statesman George Brown, who helped to promote Canadian Confederation. *Oct. 25*, Vancouver's \$32,000,000 International Airport terminal officially opened. *Oct. 26*, The \$3,500,000 Centennial Museum-MacMillan Planetarium complex officially opened in Vancouver. *Oct. 28*, At Olympic Games held in Mexico City, the Canadian equestrian team of Tom Gayford, Jim Day and Jim Elder won Canada's only gold medal; three silver medals, two by Elaine Tanner and one by Ralph Hutton, and a bronze medal by the women's swimming team in a free-style relay completed Canada's total. The unmanned Soviet space ship, *Soyuz 2*, landed in the U.S.S.R. after three days in space; its manned sister ship, *Soyuz 3*, continued in orbit for another day after manoeuvring experiments to investigate docking systems. *Oct. 30*, Demonstrations by taxi drivers against a limousine service's monopoly on passenger traffic from Montreal International Airport led to a clash with police. *Oct. 31*, U.S. President Johnson announced the cessation, effective Nov. 1, of all air, naval and artillery bombardment of North Viet-Nam in what he hoped would be "a major step toward a firm and honorable peace in southeast Asia".

November: Dr. John F. Booth, a pioneer in agricultural economics in Canada and organizer and Director of CDA's Economics Division 1929-60, elected a Fellow of the American Agricultural Economics Association, the first Canadian to be so honoured. *Nov. 1*, Report of the Royal Commission on Security, established Nov. 16, 1966, delivered to Prime Minister Trudeau; only the sections of the report not involving security to be made public. *Nov. 4*, Prime Minister Trudeau announced in the House of Commons that the Federal Government will get out of the Medicare program in five years, once it is well established—costs will be split with the provinces until 1972, then additional taxation powers turned over to the provinces together with full responsibility for the program. *Nov. 4-6*, Federal-provincial fiscal conference of finance and health ministers opened in Ottawa. *Nov. 6*, Richard Milhaus Nixon elected the 37th President of the United States. First clinical trial on a human being in an eye operation to implant a plastic cornea performed in Toronto. *Nov. 11*, Fiftieth anniversary of Armistice Day celebrated in Mons, Belgium, by Canadian World War I veterans. *Nov. 13*, Dagmar Langer of Toronto received the first Christina Centennial Scholarship founded at Expo 67 by Princess Christina of Sweden. Montreal's container terminal began operations, receiving European container-packed goods for shipment to inland centres. *Nov. 14*, John J. Deutsch,

President and Vice-Chancellor of Queen's University and former Chairman of the Economic Council of Canada, presented the Vanier Gold Medal of the Institute of Public Administration in 1968. Nov. 15, Canadian aid to Biafra came to a standstill following 11 successful trips by a C-130 plane; Prime Minister Trudeau announced abolition of immigration laws to allow Canadian citizens and institutions to adopt children orphaned in the civil war; reporters and cameramen banished from the war zone. Prime Minister Trudeau announced establishment of a fund for special projects to aid the leaders of opposition parties in their parliamentary duties—the leader of the Conservative party \$125,000 a year and the leaders of the New Democratic and Liberal parties \$35,000 each. Nov. 17, The unmanned spacecraft *Zond 6* successfully landed on the moon. The Canadian team of Al Rostron and George Knudson won the World Curling tournament in Rome, defeating 41 other teams; this was the first victory for Canada since this country donated the cup in 1914. Nov. 18, The CNR granted permission by Newfoundland's Board of Public Utilities Commission to operate a trans-island bus service between the passenger train "Newfie Bullet" and the ferry. Meeting in Bonn, Germany, of the Central Bank Governors of the Americas was headed by Canada's Finance Minister, and Bank of Canada Governor announced measures to restore equilibrium in the international monetary system threatened by massive speculative capital movements involving some European currencies. Louis Rasminsky, Governor of the Bank of Canada, awarded the 1968 outstanding achievement award of the Public Service of Canada. The Royal Agricultural Winter Fair closed its 100th season; Canada took seven of ten world cup championships, that for wheat won by Harold Hansen of Vulcan, Alta.; the Guinness Award to the 4H Club exhibitor of the grand champion baby-beef steer was won by John Curtis of Belwood, Ont. Three-day session of the administration building at the University of British Columbia, B.C., by students to demand changes in admission requirements and education finances, ended in police action; 114 students charged, 101 were fined, 13 were jailed and the remainder remanded Mar. 25, Canada Council Medals for outstanding cultural achievement awarded to Earle Browne and A. J. M. Smith, poets, Eric Arthur Blair, architect, Gabrielle Roy, novelist and Jacques Desjardins, painter. Nov. 26, Quebec Liquor Board employees, on strike since June 26, went back to work after voting to accept latest government offer. Nov. 27, The International Dance Competition in Paris, France, announced Gold Star award to the Royal Winnipeg Ballet as the best company in the festival and to Christine Scherer as prima ballerina, for best female dancer. Nov. 29, In the largest civil suit in the world and the longest civil suit in Canada, the Ontario Supreme Court ruled against the Texas Gulf Sulphur Co., New York, in a claim by Leitch Gold Mines Ltd. of Ontario for \$450,000,000 in damages for breach of contract in connection with the development of orebodies in the Timmins area of Ontario. Nov. 30, The Ottawa Rough Riders won the Grey Cup, defeating the Calgary Stampeders in Toronto by a score of 24-21.

December: Dec. 1, Minimum wage in Manitoba increased to \$1.25 an hour from \$1.20. Dec. 2, Prime Minister Trudeau announced in the House of Commons that the Federal Government has offered the coastal provinces a 9-p.c. administrative share of the 1,500,000-sq. mile Canadian continental shelf, retaining control of the area beyond the one-half-to-one-mile offshore line. To bring

educational equality to all Ontario children, the system of local school boards in effect for more than 100 years was replaced by a system of county boards; the reduction in number was 1,446 to 136. Dec. 3, A statement by the Secretary of State for External Affairs to the Standing Committee on External Affairs and National Defence on the NATO Ministerial meeting held in Brussels pointed out that, for the first time in the history of the alliance, the delegates had assembled in advanced session to deal specifically with the implications of a serious international development, namely, the Soviet invasion and occupation of Czechoslovakia. Defence Minister Cadieux announced acceleration of a program of modernization and "qualitative improvement" of Canadian land and sea forces committed to NATO. Dec. 6, Harry E. Strom elected leader of the Alberta Social Credit Party, succeeding Ernest C. Manning; sworn in as Premier of Alberta Dec. 12. Dec. 9, Second report of the Royal Commission on Bilingualism and Biculturalism tabled in the House of Commons; major recommendations were that all children in Canadian schools be required to study the second official language, and that the Federal Government make grants to the provinces so that this may be carried out. Transport Minister Hellyer announced that Air Canada is authorized to sell its Winnipeg overhaul base and move its operations to Montreal, a proposal that has been the subject of controversy among workers, politicians, unions and municipal officials of both cities for several years. Dec. 11, The Supreme Court of Canada restored a trial judge's finding that Premier W. A. C. Bennett of British Columbia was guilty of slander in remarks he made about a former provincial public servant, and restored an award of \$15,000 in damages to Mr. Jones. Dec. 13, Third and final reading given to a Bill in the Quebec Legislature abolishing the Legislative Council, effective Dec. 31; the name of the Legislative Assembly was changed to National Assembly of Quebec, and members are to be called Members of the Parliament of Quebec. Dec. 16, The City of Montreal and the Quebec Government each offered a \$10,000 reward "for information leading to the arrest and conviction" of bomb terrorists; 48 bombs were reported planted in the Montreal area during 1968 and no arrests made. Dec. 16-17, Letters exchanged between Canadian Finance Minister and the U.S. Treasury Secretary contained agreement that Canada was no longer bound by the upper limit of \$2,550,000,000 previously set on its foreign currency reserves but that the U.S. relied on continued Canadian co-operation with the U.S. measures to stem an excessive outflow of funds. Dec. 18, The Seaway International Bridge at Cornwall blocked by Indians from the nearby St. Regis Reserve in protest against the imposition of customs duties on purchases made in the United States where many of them work, claiming exemption under the Jay Treaty of 1794; 45 arrests were made. A study conducted for the Royal Commission on Farm Machinery criticised manufacturers and provincial governments for ignoring safety measures in the designing of tractors. British sculptor Henry Moore announced the donation of between 400 and 600 of his works to the Ontario Art Gallery in Toronto. Dec. 19, The CNR and CPR announced plans for a \$1,000,000,000, 15-year Toronto waterfront redevelopment plan, to create a central transportation, communication and residential area. Federal-provincial conference of finance ministers held in Ottawa. Dec. 20, A unique single bank-financing venture—the formation of a consortium of Canadian chartered banks to provide \$150,000,000 to assist in financing construction of the Churchill Falls power project in Labrador—announced by the Chairman of Churchill Falls (Labrador) Corp. Ltd. The House of Commons unanimously after long debate approved the bulk of a parliamentary reform Bill designed to speed the business of Parliament by reducing the time spent on debate in the House, giving more authority to committees in

studying the subject of debates now carried on in the House, abolishing the committee of ways and means, and other measures; Rule 16A, allowing the government house leader to set time limits on debate in advance, referred back to committee for further consideration. Death in Digby, N.S., of Senator Edouard J. Thériault. The second volume of the report of the Royal Commission on Pilotage recommended the operation of pilotage services on the West Coast as a public service and more clearly defined pilotage waters and more equitable rate structure. Dec. 21, Hervé Filion, Angers, Que., became the first harness driver in the world to win more than 400 races in one year. Dec. 21-27, First manned flight around the moon; U.S. astronauts Frank Borman, James Lovell and William Anders in *Apollo 8* orbited the moon 10 times during the 20-hour period Christmas Eve and Christmas Day, and made the first live telecasts to earth from manned craft. Dec. 27, George Ignatieff, Canadian Ambassador to the UN, appointed Canadian Envoy to the 18-Nation Committee on Disarmament in Geneva, succeeding Lt.-Gen. E. L. M. Burns. Dr. Norman Kenneth Hollenberg of Winnipeg and Dr. Roland James Baird of Toronto named the 1969 medallists in medicine and surgery, respectively, by the Royal College of Physicians and Surgeons of Canada. Dec. 28, An Israeli attack on the international airport at Beirut destroyed or damaged 13 aircraft, in retaliation to an attack on an Israeli jetliner at Athens Airport by two Arab commandos two days earlier in which one passenger was killed, resulted in strong protests by U.S., U.K., U.S.S.R., French and Canadian spokesmen. Dec. 30, Death in Norway of Trygve Lie, the first Secretary-General of the United Nations. In a year-end poll of women working in the newspaper, radio and television fields, Nancy Greene, already selected by sports editors as the top Canadian woman athlete for 1968, was chosen Canada's Woman of the Year. Acadia University announced the appointment of its first Chancellor, Col. the Hon. H. P. MacKeen, former Lieutenant-Governor of Nova Scotia. A report commissioned by the Department of Indian Affairs and Northern Development on the economic potential of the Yukon Territory was released; recommendations included the expenditure of \$1,400,000,000 on private and public development programs between 1969 and 1985, with particular emphasis on requirements of the mining industry and transportation and power facilities.

1969

January: Jan. 1, Annexation of five western suburbs increased the population of Halifax by 35,000 to 123,000 and its land area from 7 to roughly 24 square miles and extending it beyond its peninsular setting. Death in Toronto of Mrs. Wendy Lawrence, youngest daughter of Governor General and Mrs. Roland Michener, well-known writer and film critic. Jan. 2, Death in London, Ont., of Hon. Ivan C. Rand, C.C., a former Justice of the Supreme Court of Canada, originator of the Rand formula now in wide use in Canada and the United States as an answer to the union shop problem, and first Dean of the Law School at University of Western Ontario. Eaton's of Canada began a year-long celebration marking 100 years of department store business. Jan. 6, Report of a special committee on Ontario farm income released; recommendations included the formation of one general farm organization, establishment of a comprehensive food production and marketing system under the direction of a central agency, a central warehousing system to handle spare parts for farm machinery, broadening of educational programs with farmers in mind and an improvement in present leasing arrangements. Jan. 7, The \$29,000,000 Manitoba Hydro project that calls for raising Southern Indian Lake by 35 feet with the diversion of 80 p.c. of the Churchill

River waters strongly opposed by Indians and metis living in the area because of potential damage to the trapping and fishing industry in a meeting of more than 600 Indians and metis with Manitoba Natural Resources Minister. Jan. 7-10, Leaders of the 28 Commonwealth countries met in conference in London; discussion included the problems of Rhodesia and Red China. Jan. 8, The Ottawa Police Commission offered a \$5,000 reward for information leading to the arrest and conviction of those responsible for four mailbox bomb incidents in the city on December 31 and Jan. 2. Jan. 11, Death in Prince Albert, Sask., of Hon. W. F. A. Turgeon, C.C., Chief Justice of Saskatchewan, former Canadian diplomat and head of many royal commissions. Jan. 13, The Russian national hockey team cancelled its Canadian tour but later reversed the decision, playing the first game Jan. 19 and continuing the series to defeat the Canadian national team in all eight games played. Jan. 16, Energy, Mines and Resources Minister Greene announced that a Canadian research ship based on Dartmouth, N.S., will embark on a year-long expedition in November 1969, completely circumnavigating the Americas, and carrying scientists from government departments, universities and institutes who will conduct investigations ranging from marine biology to oceanographic circulation and the food potential of ocean waters. Jan. 16-17, Federal and provincial welfare ministers met in Ottawa and agreed on the setting up of committees to study ways of keeping control of rising social assistance costs and to look for ways to involve welfare recipients directly in the operation of welfare programs. Jan. 17, Georges Lemay, the first man wanted by the police to be recognized via Telstar satellite broadcast, sentenced to prison for eight years for organizing and participating in the 1961 bank vault robbery in Montreal. Three Soviet cosmonauts in *Soyuz 4* successfully performed the world's first manned docking in space and crew transfer with one cosmonaut in *Soyuz 5*. Jan. 22, Fines and damages totalling \$39,100 levied against the CNTU for violations of strike injunctions and mill damages and the signing of a wage agreement with Domet Pulp and Paper Products Ltd. at Windsor and East Angus, Que., ended the six-month strike by 1,200 Quebec paper mill employees. Jan. 23, Death in Toronto of Malcolm Wallace McCutcheon, former Senator and Cabinet Minister. Jan. 24, An agreement made between France and Quebec to study the development of a communications satellite system; criticism in the House of Commons because of federal jurisdiction in the communications satellite field and of Quebec's failure to inform the Federal Government in advance of its intentions. Jan. 29, Final report of the federal task force on housing established in September 1968 under Transport Minister Hellyer tabled in the House of Commons; major recommendations of the report include gradual abolition of down-payments on houses for middle- and lower-income groups, removal of sales tax on building materials for residential construction, direct loans to municipal or regional governments for the acquisition and servicing of land for urban growth, and a halt to construction of large public housing projects pending study to determine their economic and social worth. Canada's third space satellite, *ISIS A*, successfully launched from Vandenberg Air Force Base in California, supplemented by that sent back by *Alouettes I* and *II*, still in orbit, will make a significant contribution to knowledge of the upper atmosphere and solar-terrestrial relations. Jan. 29-Mar. 12, Student occupation of the computer centre in the new Sir George Williams University building in Montreal in protest over alleged racism erupted into violence by fire and other means, ending in the destruction of the computer and university records in damage estimated at \$2,000,000; charges of conspiracy to commit mischief and arson were laid against 90

adults and seven juveniles; all but nine were granted bail by February 20; parents of six of the seven juveniles arrested were each fined \$250 and severely reprimanded in Social Welfare Court. *Jan. 31*, The Council of the Northwest Territories announced the choice of its official banner from more than 3,000 entries—a flag with blue borders at each end and the N.W.T. coat of arms superimposed on a white middle section.

February: *Feb. 1*, Inauguration of a program of medical care for northwestern Ontario; doctors from the University of Toronto teaching hospitals alternate in spending short periods at the 70-bed Federal Government hospital at Sioux Lookout and 5 nursing stations in outlying communities with emphasis on child care. *Feb. 3*, A painting by Rex Woods of Toronto of the Fathers of Confederation, commissioned by the Confederation Life Association as a Centennial project to replace the original destroyed in the Parliament Hill fire of 1916, unveiled on Parliament Hill by House Speaker Lucien Lamoureux; it will be on permanent display in the National Library and Public Archives Building. *Feb. 5*, The two-week Winter Carnival at Quebec City opened; guest of honour was Princess Grace of Monaco. *Feb. 10*, A bomb explosion causing some damage and injury to one man took place near a Canadian Armed Forces building in Montreal. Canada's first conference on urban transportation held in Toronto; unified planning for transport and urban growth agreed upon, particularly in the Toronto, Montreal and Vancouver areas, but no unanimity reached as to financial responsibility. *Feb. 10-12*, Federal-provincial constitutional conference held in Ottawa; agreement reached to study further the matters of constitutional reform, recommendations of the Royal Commission on Bilingualism and Biculturalism, fiscal and other powers of both federal and provincial governments, shared-cost programs, regional economic disparities, Senate and judicial reform and the establishment of a Canadian capital region. *Feb. 11-Mar. 11*, Governor General and Mrs. Michener on tour of four Caribbean countries, the first officially designated state visit abroad by a Canadian Governor General. Explosion of a bomb outside a Montreal armory near Place Ville Marie injured a security guard and broke several hundred windows in the vicinity. *Feb. 13*, Damage estimated at \$500,000 was done to the Montreal and Canadian Stock Exchanges and 27 persons were injured by a bomb explosion; rewards for information leading to the arrest of those responsible total \$50,000. *Feb. 16-20*, Conference of French-speaking nations held in Naimey, Niger, to which Quebec and Canada received separate invitations despite agreement that a Canadian delegation would be headed by a federal official with assisting provincial representatives; several incidents related to this situation and action of a Quebec singer embarrassed the Niger Government. *Feb. 19*, Appointment of Judge René Lippé of Montreal as mediator in the 18-month-old dispute between 70,000 Quebec teachers and the school boards and provincial government approved by both sides; the province-wide rotating strike system ended with the commencement of negotiations. *Feb. 20*, Establishment of Hockey Canada, a non-profit corporation having as its goal the developing of a national team capable of bringing the world hockey title back to Canada, announced by Health Minister Munro; prominent business and sport executives, including Max Bell of Calgary, David Molson of Montreal and Stafford Smythe of Toronto, are on its board of directors. *Feb. 21*, A Royal Commission appointed by the British Columbia Government to investigate the affairs of the Commonwealth Trust group of companies; members of the Commission resigned on Mar. 17 claiming the Commonwealth problems had become a political issue and the subject of

debate in the Legislature. Mrs. Réjeane Laberge-Colas, a Montreal lawyer, became the first woman in Canada to be named to the bench of a Superior Court. *Feb. 22*, Bomb explosion at the Liberal Party social club in Montreal injured two persons. *Feb. 23*, The first scheduled Hovercraft service in Canada began with the inauguration of regular trips between Vancouver and Nanaimo on Vancouver Island. *Feb. 25*, Bomb explosion at the Queen's Printer store in Montreal; damage was light. *Feb. 26*, The City of Montreal announced acceptance of a federal-provincial formula to ensure the continuation of Man and His World for another year. *Feb. 27*, Death of Dr. Marius Barbeau, leading authority on the lore and songs of native Canadian peoples.

March: *Mar. 3-13*, U.S. spacecraft *Apollo 9*, carrying three astronauts, successfully completed the most dangerous and complex flight yet undertaken—ejecting a manned lunar module from the command ship, turning the command ship around and docking it with the module. *Mar. 4*, The RCMP announced replacement of last remaining dog teams by power toboggans; phasing out to be completed in 1970. *Mar. 5*, Prime Minister Trudeau announced the cancellation of plans to build the promised Causeway between Prince Edward Island and New Brunswick, because of cost; project replaced by improved ferry services and terminals, and a 15-year \$225,000,000 program designed to strengthen the Island's agriculture, tourist, fisheries and forest industries. *Mar. 6*, Papers and memorabilia of Sir Wilfrid Laurier, the first exhibit ever assembled, on display in the National Library and Archives Building, Ottawa. *Mar. 7*, Pierre-Paul Geoffroy of Berthier, Que., pleaded guilty to 129 charges of making and placing bombs, conspiracy and theft and possession of dynamite in connection with 31 recent terrorist bombings in the Montreal area; and admitted being a member of the terrorist Front de Libération Québécois (FLQ); sentenced Apr. 1 to life imprisonment. *Mar. 10*, James Earl Ray pleaded guilty in Memphis, Tenn., to first-degree murder charge for the assassination of Dr. Martin Luther King and sentenced to 99 years in prison. *Mar. 14*, U.S. President Nixon announced a plan to build anti-ballistic missile bases at points near the Canadian border. Canada's second satellite-tracking ground station officially opened in Mill Village, N.S., by Postmaster General Kierans; it is to be used for commercial communications traffic, permitting the first station, adjoining it, to revert to the experimental use for which it was designed. A report of the committee on religious education in Ontario public schools, established in 1966, tabled in the Legislature; recommendations included the elimination of religious indoctrination and the teaching of comparative religion and ethics and morality substituted. *Mar. 15-18*, The Rt. Hon. Lester B. Pearson made public his personal files recording his actions in the controversies over Rivard, Spencer and Munsinger during his term as Prime Minister in answer to charges by Peter C. Newman and former Secretary of State Judy LaMarsh in their books that he had sacrificed two of his Ministers of Justice, Cardin and Favreau, to protect himself. *Mar. 18*, Death in Ottawa of John Bracken, former President of the Manitoba Agricultural College, Premier of Manitoba 1922-43 and Leader of the Progressive Conservative Party 1942-43. *Mar. 19*, Premier Bertrand of Quebec announced that the proposed language rights Bill introduced in the Legislature Dec. 9, 1968, giving statutory right to English-language education allowing children to be taught in either French or English, would be permitted to die due to increasing confrontation between proponents of bilingualism and French unilingualism. *Mar. 22*, The Calgary team skipped by Ron Northcott won the world curling championship in Perth, Scotland. *Mar. 23*, Death in Montreal of Arthur Lismer,

prominent Canadian artist and teacher and a member of the famous Group of Seven. *Mar. 24*, Paul-Émile Cardinal Leger, former Roman Catholic Archbishop of Montreal, who resigned to work in African leper colonies, awarded the third \$50,000 Royal Bank award "for a life of devotion to the common man". *Mar. 24-25*, Prime Minister Trudeau visited Washington for discussions with President Nixon on matters of mutual concern. *Mar. 24-27*, The Canadian Agriculture Congress composed of 400 representatives from 132 organizations met in Ottawa to plan agricultural policies for the next decade. *Mar. 26*, The report of the federal task force inquiring into labour-management relations, headed by Dean H. D. Woods of McGill University, tabled in the House of Commons; recommends that a major overhaul be made of all labour legislation including creation of an independent commission to deal with public-interest disputes, that all workers be given the right to refuse to cross legal picket lines at the site of the dispute, and that all unions be made accountable in law for their action in the same way as corporations. *Mar. 27*, Transport Minister Hellyer announced Federal Government plans to build and complete by 1974 a new \$400,000,000 international airport at St. Jérôme, Que., 26 miles north of the centre of Montreal. Louis Marceau, a Quebec City lawyer, appointed Quebec's first ombudsman. *Mar. 28*, Death in Washington of former U.S. President Dwight D. Eisenhower, Commander of the Allied Forces during World War II. About 6,000 persons peacefully demonstrated in a march to McGill University in Montreal in support of their demand that the university be turned into a French institution; later, about 25 people were charged with disturbing the peace, carrying offensive weapons and assaulting policemen in the Montreal downtown area. Dr. Donald Putnam, geography professor at University of Toronto, presented the Massey Medal of the Royal Canadian Geographical Society for his work in land forms. Royal Assent given to the Government Organization Act, 1969 which establishes new departments and agencies of government, abolishes or consolidates others, and re-arranges duties; the main purpose of the provisions of this Act is to eliminate duplication, to simplify administrative structures and to provide better service to the public. *Mar. 30*, The Canadian hockey team was defeated 4-2 by the Russian national hockey team in Stockholm, Russia becoming the world hockey medallists for the seventh consecutive time and Canada coming fourth in the tournament. *Mar. 31*, Newfoundland celebrated the 20th anniversary of its joining Confederation. Saskatchewan adopted as its official flag a two-tone banner with a green upper half representing northern parklands, and a yellow lower half symbolizing the southern wheat fields; a prairie lily, the flower of the province, is at the left and the provincial emblem, a lion and three sheaves of wheat, in the upper right-hand corner; the design was chosen in a province-wide contest and accepted by the Legislature on a free-vote vote.

April: Three-mile causeway to the man-made island of Roberts Bank, south of Vancouver, officially opened; this is part of the deepsea port being developed to provide facilities for shipping coal from British Columbia and Alberta mines to Japan. *Apr. 1*, A law permitting civil marriages in Quebec province came into effect. *Apr. 2*, The Ontario government announced that all ores mined in the province must, after Jan. 1, 1970, be processed and treated in Canada. *Apr. 2-3*, The Rt. Hon. J. G. Gorton, Prime Minister of Australia, visited Ottawa. *Apr. 8*, A VIP railway car used for 70 years on the "Newfie Bullet"

donated to the National Museum of Science and Technology in Ottawa. The recently organized baseball team, the Montreal Expos, in their first game defeated the St. Louis Cardinals by a score of 11-10. *Apr. 9*, To prevent speculation, the Quebec Mining Explorations Co., a Quebec government company, prohibited the staking of mining claims on the site of the proposed new international airport at St. Scholastique. *Apr. 10*, Robert A. Farquharson, former managing editor of *The Globe and Mail*, and the late Lord Atholstan, founder of the *Montreal Star* 100 years ago, named to the Canadian News Hall of Fame. *Apr. 13*, The Greater Winnipeg Floodway, completed in 1967 to divert the overflow of the Red River around the City of Winnipeg, went into operation for the first time as the waters of the Red River rose. *Apr. 18-18*, Flooding of rivers in Manitoba and Saskatchewan, including the Qu'Appelle, Souris, Assiniboine, Whitemud and Red, created emergency conditions in some areas. *Apr. 17*, The Canadian Government purchased at auction for \$16,000 the 32-page account of the 1870 Rebellion by Louis Riel in his own handwriting. Dr. Sylvia Ostry appointed a Director of the Economic Council of Canada, the highest post ever held by a woman in government service. *Apr. 20*, Death in Toronto of Charles Leo Labine, who, with his brother Gilbert, in 1931 discovered and exploited Canada's first-known pitchblende deposit, later the Government's first source of uranium, on Great Bear Lake in the Northwest Territories. The 6,200 members of the International Association of Machinists and Aerospace Workers employed by Air Canada went on strike in support of wage parity with their counterparts in the U.S. involving a 20-p.c. increase in wages in a one-year contract; Air Canada grounded. *Apr. 21*, Winners of the Governor General's Literary Awards for 1968 announced: Leonard Cohen (poetry in English); Mordecai Richler (fiction in English); Alice Munro (fiction in English); Marie-Claire Blais (fiction in French); Fernand Dumont (non-fiction in French); and Hubert Aquin (fiction in French); the latter was declined. *Apr. 23*, Prime Minister Trudeau introduced in the House of Commons a motion for approval of its revised defence policy announced earlier this month involving a phased reduction of its NATO forces in Europe and giving greater priority to protection of Canadian sovereignty and to co-operation with the U.S. in the defence of North America. *Apr. 24*, Resignation of Transport Minister Hellyer as member of the Cabinet because of disagreement with Cabinet policy of giving priority to constitutional reform instead of to housing legislation. *Apr. 25*, The maximum amount that may be borrowed for a new house financed under the National Housing Act increased from \$18,000 to \$25,000 and on existing houses from \$10,000 to \$18,000; further amendments include provisions to increase the flow of mortgage funds from private lenders, to extend the maximum amortization from 35 to 40 years, to approve a form of mortgage with a five-year renewal and to reduce the rate of mortgage insurance fees by 50 p.c. *Apr. 28*, President Charles de Gaulle of France, repudiated in a national referendum, resigned. Believed to be the most severe penalties on charges of possession of marijuana for the purpose of trafficking, Donald MacRitchie Johnston and Sydney Durward Tremayne sentenced in Toronto to 14 years in penitentiary. H.M. Queen Elizabeth II presented with Burmese, a 7-year-old black mare that was the lead horse in the RCMP Musical Ride, by Solicitor General McIlraith and RCMP Commissioner F. A. Lindsay at Windsor Castle. *Apr. 30*, Award of the 1968 Stephen Leacock Memorial Medal to Stuart Trueman, Saint John, N.B., for his book *You're Only As Old As You Act*.

APPENDIX

CONSTITUTION AND GOVERNMENT

Certain information given in Chapter II on Constitution and Government (closed off Dec. 31, 1968) is updated in this Appendix to early May 1969. Appointments to the Queen's Privy Council for Canada, the Cabinet and the Senate, as well as the appointment of the Lieutenant-Governor of Newfoundland, from Dec. 31, 1968 to early April 1969 are included in the Register of Official Appointments at pp. 1261-1268.

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The provisions of the Government Organization Act, 1969 resulted in changes in the names of the portfolios held by certain Cabinet Ministers, which, on Apr. 30, 1969, were as follows:—

Hon. Edgar John BENSON.....	Minister of Finance
Hon. Jean-Luc PEPIN.....	Minister of Industry, Trade and Commerce
Hon. Jean MARCHAND.....	Minister of Regional Economic Expansion
Hon. Jack DAVIS.....	Minister of Fisheries and Forestry
Hon. Donald Campbell JAMIESON.....	Minister of Supply and Services and Receiver General

On Apr. 24, 1969, the Hon. Paul Theodore HELLYER resigned from the Cabinet and on May 5, 1969 the following changes were made: the Hon. Donald Campbell JAMIESON, Minister of Supply and Services and Receiver General, became Minister of Transport; the Hon. James Armstrong RICHARDSON, Minister without Portfolio, became Minister of Supply and Services and Receiver General; and the Hon. Robert Knight ANDRAS, Minister without Portfolio, became Minister in Charge of Housing.

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The Hon. Arthur L. BEAUBIEN, Senator for Manitoba, retired on Feb. 1, 1969.

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By-elections held between Dec. 31, 1968 and Apr. 30, 1969 were as follows:—

<u>Electoral District</u>	<u>Date of By-election</u>	<u>Member Elected</u>
Nanaimo-Cowichan-The Islands, B.C.....	Feb. 10, 1969	T. C. DOUGLAS
Comox-Alberni, B.C.....	Apr. 8, 1969	T. S. BARNETT

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Section 2 and Section 3 (part) of Part III of the Constitution and Government Chapter are here brought up to the date of Apr. 30, 1969.

Section 2.—Departments, Boards, Commissions, etc.

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Although it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in the Chapters of this volume. The Index will be useful in locating required information.

Department of Agriculture.—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch and the Health of Animals Branch; the Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Board of Grain Commissioners; and farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Canadian Dairy Commission Act, the Agricultural Stabilization Act and the Agricultural Products Board. The Agricultural Stabilization Board, the Farm Credit Corporation, the Board of Grain Commissioners, the Canadian Dairy Commission and the Canadian Livestock Feed Board report to Parliament through the Minister of Agriculture.

Anti-dumping Tribunal.—Under the Anti-dumping Act (SC 1968-69, c. 10) the Anti-dumping Tribunal is declared to be a court of record and makes formal inquiry into the impact of dumping on production in Canada. Within three months of a preliminary decision of the Deputy Minister of National Revenue, the Tribunal must make an order or finding on the question of injury, threat of injury or material retardation to production in Canada. Decisions of the Tribunal are final and conclusive. The Tribunal consists of a chairman and not more than four other members. Its offices are located in Ottawa and it may conduct hearings in other centres in Canada. The Tribunal reports to Parliament through the Minister of Finance.

Auditor General's Office.—This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Board of Grain Commissioners.—Constituted in 1912 under the Canada Grain Act (RSC 1952, c. 25), the Board of Grain Commissioners for Canada provides general supervision over the physical handling of grain in Canada by licensing elevator operators, inspecting and weighing grain received at and shipped from terminal elevators, and other services. The Board, comprising a chief commissioner and two commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the *Canada Gazette* and reports to Parliament through the Minister of Agriculture.

Canadian International Development Agency.—As at Nov. 9, 1960, the operation and administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order in Council, placing it in charge of a director general. In 1968 the name of the organization was changed to the Canadian International Development Agency (CIDA) and it was placed under the direction of a president. The Agency reports to Parliament through the Minister of External Affairs.

Canadian Penitentiary Service.—The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

Canadian Pension Commission.—This Commission, established in 1933 by amendments to the Pension Act (RSC 1952, c. 207), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates upon all claims for pension in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X inclusive of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly

related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures; authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces; and administers various trust funds established by private individuals for the benefit of veterans and their dependants. The Commission consists of eight to twelve commissioners and up to five *ad hoc* commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Head of a department and the Commission reports to Parliament through the Minister of Veterans Affairs.

Canadian Radio-Television Commission.—This Commission, established under the provisions of the Broadcasting Act assented to Mar. 7, 1968, is given authority to regulate and supervise all aspects of the Canadian broadcasting system. The Executive Committee, after consultation with the part-time members in attendance at a meeting of the Commission, may issue broadcasting licences or renewal licences for such terms not exceeding five years and subject to such conditions related to the circumstances of the licensee as the Executive Committee deems appropriate for the implementation of the broadcasting policy enunciated in Sect. 2 of the Broadcasting Act. Under the same circumstances, the Executive Committee may, upon application by a licensee, amend any conditions of a broadcasting licence issued to him. Applications for licences to establish new broadcasting undertakings, for amendments to licences, for renewal licences, or for changes in the ownership or in the share structure of licensees are filed with the Secretary, Canadian Radio-Television Commission, Ottawa, Ont. A public hearing shall be held by the Commission in connection with the issue of a broadcasting licence, other than a licence to carry on a temporary network operation; or where the Commission or the Executive Committee has under consideration the revocation or suspension of a licence. A public hearing shall be held by the Commission, if the Executive Committee is satisfied that it would be in the public interest to hold such a hearing in connection with the amendment of a licence, the issue of a licence to carry on a temporary network operation or a complaint by a person with respect to any matter within the powers of the Commission. A public hearing shall be held by the Commission in connection with the renewal of a licence unless the Commission is satisfied that such a hearing is not required.

The Commission consists of five full-time members and ten part-time members. It reports to Parliament through the Secretary of State.

Canadian Transport Commission.—The Canadian Transport Commission created in 1967 by the National Transportation Act (SC 1967, c. 69) took over powers formerly vested in the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission, giving it regulatory and judicial functions with respect to almost all aspects of railway, commercial air and merchant marine services. The Act also provides for the regulation of extra-provincial motor vehicle transport and commodity (solids) pipelines. The Commission is divided into five Committees for the purposes of performing its regulatory duties under the Act: (1) The Railway Transport Committee deals with location, construction and operation of lines and with rates and fares; it also deals with the regulation of express companies, and telegraph and telephone companies (except those provincially or municipally controlled), and the tolls of international bridges and tunnels. (2) The Air Transport Committee is responsible for the economic regulation of commercial air services provided by Canadian air carriers within Canada and abroad, and by foreign carriers operating into and out of Canada. (3) The Water Transport Committee has the function of making recommendations concerning domestic and international shipping policy and the merchant marine and of co-ordinating such policies with those applying to other modes of transport; it also administers the steamship subsidies voted by Parliament. (4) The Motor Vehicle Transport Committee is responsible for the regulation of commercial interprovincial and international motor vehicle transport. Prior to the passing of the National Transportation Act, regulation of all motor vehicle transport was carried out by the provinces. (5) The Commodity Pipeline Committee controls the licensing of interprovincial and international (solids) pipelines and the regulation of pipeline tolls. Regulation of oil and gas pipelines remains the duty of the National Energy Board.

The Canadian Transport Commission is also given the responsibility for conducting investigations and research and for making recommendations on economic policy in all transportation fields in so far as the Federal Government is concerned. The Commission reports to Parliament through the Minister of Transport.

Department of Communications.—The Department of Communications was established under Part II of the Government Organization Act, 1969 (SC 1968-69, c. 28), which received Royal Assent on Mar. 28, 1969. The duties and powers of the Minister cover all matters over which the Parliament of Canada has jurisdiction relating to telecommunications and the development and utilization generally of communication undertakings, facilities, systems and services for Canada. They include the planning and co-ordination of telecommunication services for departments and agencies of the Government of Canada, formerly under the jurisdiction of the Department of Transport, assistance to communications systems and facilities to adjust to changing domestic and international conditions, and the securing, by international regulation or otherwise, the rights of Canada in communications matters. The Minister of Communications is the Postmaster General and has the management and direction of the Post Office Department.

The Canadian Overseas Telecommunications Corporation reports to Parliament through the Minister of Communications.

Department of Consumer and Corporate Affairs.—Legislation to establish this Department (SC 1967-68, c. 16) received Royal Assent on Dec. 21, 1967. This statute transformed the former Department of the Registrar General of Canada into the new Department of Consumer and Corporate Affairs. The duties, powers and functions of the Minister extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcy and insolvency; and patents, copyrights and trade marks.

As Registrar General of Canada, the Minister of Consumer and Corporate Affairs is the custodian of the Great Seal of Canada, the Privy Seal of the Governor General, the Seal of the Administrator of Canada and the Seal of the Registrar General of Canada. He is also Custodian of Enemy Property. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs.

The Restrictive Trade Practices Commission (Combines Investigation Act) is domiciled in the Department and reports directly to the Minister.

Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Industry, Trade and Commerce.

Department of Energy, Mines and Resources.—The Department of Energy, Mines and Resources was created in 1966 by the Government Organization Act (SC 1966, c. 25). The Department, in addition to its administrative services, is organized into four groups: the *Mines and Geosciences Group* includes the Geological Survey of Canada, the Mines Branch, the Surveys and Mapping Branch and the Observatories Branch, all of which are engaged in research and the provision of information in their respective fields; the *Mineral Development Group* includes the Mineral Resources Branch, which gathers economic data for all minerals for use of government, industry and the public and conducts administrative functions of resource management, the Explosives Division which controls, under the provisions of the Explosives Act, the production and handling of explosives, and the Quebec Regional Office; the *Water Group* is concerned with all types of water matters including groundwater and oceanic investigations and surveys, water pollution, water power, water conservation and control, and federal-provincial and international studies and regulations; the *Energy Development Group* has broad responsibilities relating to the development of plans and policies for all forms of energy; the development of programs, legislation and agreements to implement those policies; the direction of studies relating to energy sources and requirements, and the co-ordination of policy advice. The Assistant Deputy Minister serves as adviser on over-all plans and policies relating to energy sources and requirements.

The following Crown corporations report to Parliament through the Minister of Energy, Mines and Resources: the National Energy Board, the Dominion Coal Board, Atomic Energy of Canada Limited, Eldorado Nuclear Limited, Eldorado Aviation Limited and the Atomic Energy Control Board. The International Boundary Commission and the Interprovincial Boundary Commissions also report to Parliament through the Minister.

Department of External Affairs.—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by a Deputy Under-Secretary and by four Assistant Under-Secretaries and is advised by officers in charge of Branches, Offices and Divisions. The Heads of these units are each responsible for a part of the work of the Department and are assisted by Foreign Service Officers, Administrative Services Officers and specialists in various occupational groups, as well as by an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. Canada maintains approximately 135 diplomatic, consular and other missions, 47 of which are non-resident.

The work of the Department in Ottawa is performed by three Branches, two Offices and 19 Divisions. The three Branches are responsible respectively for Personnel, Finance and Administration and Communications and Information Systems. The two Offices are concerned with Political-Military Affairs and Economic Affairs. The Divisions are grouped into two categories: Area Divisions are African and Middle Eastern, Commonwealth, European, Far Eastern, Latin American,

and United States; Functional Divisions are Consular, Co-ordination, Cultural Affairs, Defence Liaison (2), Disarmament, Historical, Information, Legal, Passport, Press, Protocol, Relations entre Pays Francophones, and United Nations. In addition, there is an Inspection Service and a Central Planning Staff.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States. The Secretary of State for External Affairs reports to Parliament for the Canadian International Development Agency.

Department of Finance.—This Department was created by Act of Parliament in 1869 and now operates under the Financial Administration Act (RSC 1952, c. 116). The Department is responsible for the financial administration of Canada including the raising of money required for the various governmental activities by way of taxation or borrowing. The work of the Department is organized into the following Divisions: Tax Policy, Economic Development, Federal-Provincial Relations, Fiscal Policy, Pensions and Social Insurance, Resource Programmes, Municipal Grants, Economic Analysis, Government Finance and Capital Markets, Crown Corporations Financing, International Finance, Tariffs, International Economic Relations, and International Programmes. The Inspector General of Banks is a branch of the Department. The Tariff Board, the Bank of Canada and its subsidiary, the Industrial Development Bank, the Anti-dumping Tribunal, the Canada Deposit Insurance Corporation, and the Department of Insurance report to Parliament through the Minister of Finance who is also the spokesman in the Cabinet and the House of Commons for the Auditor General of Canada.

Department of Fisheries and Forestry.—Established by the Government Organization Act, 1969, the Department of Fisheries and Forestry administers all matters within federal jurisdiction relating to (1) sea coast and inland fisheries, and (2) the forest resources of Canada, except those assigned by law to any other federal department or agency.

Under the direction of the Minister of Fisheries and Forestry, the Department administers 16 Acts of Parliament; 14 relate to fisheries and two to forestry.

The Department has three principal components: the Fisheries Service, responsible for fisheries management and related activities; the Fisheries Research Board, responsible for fundamental fisheries research; and the Forestry Research Service, responsible for research related to forest management and forest products. A fourth component groups together common supporting services. The Fisheries Prices Support Board, a Crown corporation responsible for programs to stabilize returns to fishermen, reports to Parliament through the Minister of Fisheries and Forestry.

Responsibilities of the Fisheries Service are inherited from the Department of Fisheries established in 1930 to succeed what had been, since Confederation, a branch service. Fisheries are exclusively within federal jurisdiction but certain administrative authority has been delegated to provinces under varying arrangements. Field activities of the Service are administered through regional offices in St. John's, Nfld., Halifax, N.S., Quebec, Que., Winnipeg, Man., and Vancouver, B.C.

Principal responsibilities of the Fisheries Service include conservation and protection of fisheries through enforcement of laws and regulations, cultivation and development of fish stocks by scientific and technical means, inspection of fish products for quality control, encouragement of industrial development by technical and financial aid, economics research and intelligence services to industry and the public, and promotion of fisheries and fish products by information and consumer education programs. The Fisheries Service is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, North Pacific Fur Seal, Atlantic Tuna, Inter-American Tropical Tuna, and the International Council for the Exploration of the Sea.

The Fisheries Research Board, in operation as such since 1937 but tracing its antecedents to 1898, conducts fundamental research on Canada's aquatic resources, their environment and their utilization. It originated as the Board of Management of the Canadian Marine Biological Station, and in 1912 became the Biological Board of Canada. The Board functions under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53), and is headed by a full-time chairman and not more than 18 other members, mostly university scientists and industry representatives. The Board operates major research establishments in St. John's, Nfld., Halifax and Dartmouth, N.S., St. Andrew's, N.B., Ste. Anne de Bellevue, Que., Winnipeg, Man., and Vancouver and Nanaimo, B.C. Board scientists carry out research on distribution of fish stocks, biology and life history of fishes, marine mammals and other aquatic creatures and plants, oceanography, fishing techniques and on quality and nutritive value of fisheries products, with the principal objective of increasing the scope and value of Canadian fisheries.

The main functions of the Forestry Research Service include: (1) mandatory responsibility for the conduct of research relating to the protection, management, harvesting and utilization of the forest resources of Canada and the better utilization of forest products; (2) conducting economic studies relating to the forest resources, forest industries and marketing of forest products; (3) undertaking, promoting or recommending measures for the encouragement of public co-operation in the protection and wise use of the forest resources of Canada; (4) co-operating with provincial governments and others by means of special agreements on forestry matters; (5) provision of forest surveys and advice relating to the protection and management of federally administered forest lands;

(6) assuming responsibility for forest protection and management on federal lands at the request of the department or agency concerned; and (7) assisting external aid programs relating to forestry.

Forest management responsibilities of the Forestry Research Service are confined to its forest experiment stations and to providing information on forest inventory and management planning to other federal departments responsible for administration of forested lands.

Research programs in forestry are carried out in seven regional establishments, which are responsible for programs of forestry research, surveys, development projects and consultative and liaison services in their respective regions. These are multi-disciplinary units, having comprehensive forestry programs and impelling regional responsibilities, and are located at St. John's, Nfld., Fredericton, N.B., Ste. Foy, Que., Sault Ste. Marie, Ont., Winnipeg, Man., Calgary, Alta., and Victoria, B.C. Two Forest Products Laboratories, one at Ottawa and the other at Vancouver, are responsible for forest products research.

In addition, a number of institutes conduct research in restricted disciplinary fields, and have broad national responsibilities and functions but no specific regional responsibilities. These are the Insect Pathology Research Institute at Sault Ste. Marie, Ont., the Chemical Control Research Institute at Ottawa, the Forest Fire Research Institute at Ottawa, the Forest Management Institute at Ottawa, the Forest Ecology Institute at Ottawa, the Petawawa Forest Experiment Station at Chalk River, Ont., and the Forest Economics Research Institute at Ottawa.

Historic Sites and Monuments Board.—This Board was established in 1919 and amended to its present form in 1953 by an Act of Parliament (SC 1952-53, c. 39). It is an appointed body of 12 provincial and two federal officials which advises the Minister of Indian Affairs and Northern Development on matters of national historic importance with particular reference to commemoration or preservation.

Department of Indian Affairs and Northern Development.—The Department of Indian Affairs and Northern Development was established in June 1966 under the terms of the Government Organization Act (SC 1966, c. 25), superseding the Department of Northern Affairs and National Resources. In 1968, the Department was reorganized, creating, in addition to departmental support services and a Technical Services Branch, three distinct program areas: (1) the Social Affairs Program includes education, Indian trust administration and an Indian-Eskimo Bureau which provides a focal point for the federal administration for Indian and Eskimo affairs; (2) the Economic Development Program covers major resource development in the Canadian North, industrial development for Indians and Eskimos, land management of Indian reserves, wet-land acquisition, management of territorial resources along with economic research and advice; (3) the Conservation Program includes National Parks, Historic Sites and Parks and the Canadian Wildlife Service.

The Commissioner of the Northwest Territories and the Commissioner of Yukon Territory report to Parliament through the Minister of Indian Affairs and Northern Development. The Minister is also responsible to Parliament for the Northern Canada Power Commission, the National Battlefields Commission, the Historic Sites and Monuments Board of Canada and the Northern Transportation Company Limited. The Northern Scientific Adviser's Office acts in an advisory capacity to the Minister.

Department of Industry, Trade and Commerce.—The Department of Industry, Trade and Commerce was established under the Government Organization Act 1969 and is a result of a merger between the Department of Industry and the Department of Trade and Commerce.

Under the Act, the Minister of Industry, Trade and Commerce shall (1) promote the establishment, growth and efficiency of manufacturing, processing and tourist industries in Canada, contribute to the sound development and productivity of Canadian industry generally and foster the expansion of Canadian trade; (2) develop and carry out such programs and projects as may be appropriate to (a) assist manufacturing and processing industries to adapt to changes in technology and to changing conditions in domestic and export markets, (b) assist manufacturing and processing industries to develop their unrealized potential, to rationalize and restructure their productive facilities and corporate organizations and to cope with exceptional problems of adjustment, and (c) promote and assist product and process development and increased productivity, the greater use of research, the application of advanced technology and modern management techniques, the modernization of equipment, the utilization of improved industrial design and the development and application of sound industrial standards in Canada and in world trade; (3) improve the access of Canadian products, services and trade into external markets through trade negotiations and the promotion of trade relations with other countries and contribute to the improvement of world trading conditions; (4) promote the optimum development of Canadian export sales of all produce, products and services; (5) provide support services for industrial and trade development, including information, import analysis and traffic services; (6) analyse the implications for Canadian industry, trade and commerce and for tourism of government policies related thereto in order to contribute to the formulation and review of those policies; (7) compile and keep up to date detailed information in respect of manufacturing and processing industries in Canada and of trends and developments in Canada and abroad relating to Canadian industrial development and trade; and (8) promote the optimum development of income from tourism and compile and keep up to date detailed information in respect of the tourist industry and of trends and developments in Canada and abroad relating to tourism.

The Department is organized into five major functional groups: Trade and Industrial Policy; Office of Economics and Trade Analysis; Industry and Trade Development; Office of Tourism; and Administration. The Trade and Industrial Policy component comprises the Office of General Relations, the Office of Area Relations and the Office of Industrial Policy Adviser. The Office of Economics and Trade Analysis has the following Branches: General Analysis, Investment Analysis, Market Analysis, and Productivity. The Industry and Trade Development segment contains an Operations group composed of nine industry sector Branches (Chemicals; Electrical and Electronics; Agriculture, Fisheries and Food Products; Machinery; Materials; Apparel and Textiles; Mechanical Transport; Wood Products; Aerospace, Marine and Rail); an External Services group consisting of the International Defence Programs Branch and the Trade Commissioner Service which operates 74 trade offices in 51 countries; a Promotional Services group containing the Industry, Trade and Traffic Services Branch which operates seven Regional Offices in Canada, the Fairs and Missions Branch, the Publicity Branch and the Canadian Government Participation in the 1970 World Exposition (OSAKA 70) Japan; and the Office of Design Adviser and the Office of Scientific and Technological Adviser. The Office of Tourism includes the Travel Industry Branch and the Canadian Government Travel Bureau.

The Minister also reports to Parliament on behalf of the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the National Design Council, the Canadian Wheat Board and the Freshwater Fish Marketing Corporation.

Advisory Boards reporting to the Minister include the Adjustment Assistance Board, the Machinery and Equipment Advisory Board, the General Adjustment Assistance Board and the Pharmaceutical Industry Advisory Board.

Department of Insurance.—The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, who is the Deputy Head, the Department administers the statutes of Canada applicable to: insurance, loan and trust companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; pension plans organized and administered for the benefit of persons employed in connection with certain federal works, undertakings and businesses; and life insurance issued to certain members of the public service prior to May 1954.

Under the relevant provincial statutes, the Department examines trust companies incorporated in the Provinces of Manitoba and New Brunswick and loan and trust companies incorporated in the Province of Nova Scotia.

International Joint Commission.—This Commission was established under a Britain-United States treaty signed Jan. 11, 1909 and ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada), is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Department of Justice.—This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71 as amended by SC 1960, c. 4 and SC 1966, c. 25). The Minister of Justice is the official legal adviser of the Governor General and the legal member of the Queen's Privy Council for Canada. It is his duty to see that the administration of public affairs is in accordance with law, to superintend all matters connected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures and generally to advise the Crown upon all matters of law referred to him by the Crown. The Minister of Justice is, *ex officio*, Her Majesty's Attorney General of Canada. In this capacity it is his duty to advise the heads of the departments of the Government of Canada upon all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or against the Crown in the right of Canada.

Department of Labour.—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of

fair wages and hours of labour: female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; safety in employment and hours of work, minimum wages, annual vacations and holidays with pay. It promotes joint consultation with industry through labour-management committees and operates a Women's Bureau. The Department publishes the *Labour Gazette* and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization. The Unemployment Insurance Commission and the Canada Labour Relations Board report to Parliament through the Minister of Labour. The Canada Labour Relations Board administers certain provisions of the Industrial Relations and Disputes Investigation Act.

Library of Parliament.—The Library of Parliament as such was established in 1871 (SC 1871, c. 21) although it existed earlier. It currently functions under RSC 1952, c. 166 and SC 1955, c. 35. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also responsible for the House of Commons Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, Members of the Privy Council, Members of the Senate and the House of Commons, Officers of the two Houses, Justices of the Supreme Court of Canada and the Exchequer Court, and members of the Press Gallery. In addition, books are lent to other libraries and government agencies and reference service is given to scholars. A special research branch serves Parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of a department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a Joint Committee appointed by the two Houses.

Department of Manpower and Immigration.—This Department was constituted in January 1966 by the Government Organization Act (RSC 1966, c. 25), which was proclaimed effective on Oct. 1, 1966, under the Minister of Manpower and Immigration. It is composed of two operational divisions and four support services.

The Canada Immigration Division administers the Immigration Act and Regulations and is responsible for the selection and examination abroad of immigrants and their movement to Canada, and for the exclusion or deportation of undesirables. The Canada Manpower Division is responsible for the counselling and effective placement of workers, the recruitment and placement of workers to meet industry's requirements, the occupational training of adults, manpower mobility, community adjustment of migrants and immigrants and the rehabilitation of vocationally handicapped workers.

The Department also has a service which provides research and develops and evaluates programs for the two main operating divisions. Other support services are Financial and Management, Personnel, and Information.

Until Oct. 1, 1966, the Canada Immigration Division was part of the Department of Citizenship and Immigration which was renamed the Department of Manpower and Immigration; the majority of the other components of the department were, prior to Oct. 1, 1966, under the jurisdiction of the Department of Labour.

Department of National Defence.—The Department of National Defence and the Canadian Forces operate under the National Defence Act (RSC 1952, c. 184); the Canadian Forces are administered by the Minister of National Defence. Since August 1964, when a single Chief of Defence Staff was appointed, the reorganization of the Canadian Forces Headquarters, the command structure and the consolidation of the Canadian Forces Bases has been proceeding. In June 1965, a plan was announced to reduce the previous major commands in Canada to six: Maritime, Mobile, Air Transport, Air Defence, Training and Materiel. Subsequent to this announcement, a decision was made to amalgamate Materiel Command Headquarters with that of the Chief of Technical Services, Canadian Forces Headquarters and to re-assign the former Materiel Command units to the remaining five functional commands. The Act to reorganize the Canadian Forces was proclaimed on Feb. 1, 1968 and the forces were thereby unified.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, functions under the National Defence Act. The Crown corporation, Defence Construction (1951) Limited, reports to Parliament through the Minister of National Defence. The Emergency Measures Organization (EMO) reports to the Minister of National Defence through the Deputy Minister.

National Energy Board.—This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

National Film Board.—The National Film Board, established in 1939, operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine members—a Government Film Commissioner, appointed by the Governor in Council, who is chairman of the Board, three members from the Public Service of Canada and five members from outside the Public Service. The Board reports to Parliament through the Secretary of State. The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films “designed to interpret Canada to Canadians and to other nations”.

Department of National Health and Welfare.—This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74). The original Department of Health formed in 1919 later became part of the Department of Pensions and National Health, which was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is administered by two Deputy Ministers. It is composed of: the Research and Statistics Directorate and General Counsel; the Administration Branch; and seven other Branches—Health Services, Health Insurance and Resources, Medical Services, Food and Drug, Income Security, Welfare Assistance and Services and Special Programmes. The health Branches come under the Deputy Minister of National Health who also carries responsibility arising out of Canada's role in the international health field. The welfare Branches are the responsibility of the Deputy Minister of National Welfare.

The Department has charge of matters relating to the promotion and preservation of the health, social security and social welfare of the people of Canada over which the Parliament of Canada has jurisdiction. Its functions include investigation and research into public health and welfare; inspection and medical care of immigrants and seamen and medical services for and in conjunction with the Canadian Coast Guard Service; supervision of health facilities on all forms of transportation; enforcement of regulations of the International Joint Commission relating to health; promotion and conservation of the health of Federal Government employees; collection, publication and distribution of information relating to health, sanitation and social and industrial conditions affecting the health of Canadians; and co-operation with provincial authorities with co-ordination of efforts directed toward the preservation and improvement of public health and toward the provision of social security and welfare for the people of Canada.

The programs developed to enable the Department to carry out its responsibilities include: the National Grant Program under which grants are made available to the provinces for the development and extension of health services; federal emergency health and welfare services; assistance and consultation services to the provinces, upon request, respecting blindness control, child and maternal health, environmental health, mental health, dental health, nursing, medical rehabilitation, bacteriology, virology, parasitology and clinical chemistry, zoonoses, nutrition and health facilities design; a drug adverse reaction reporting program, and a central clearing house for the Canadian Poison Control Centres; health, medical and hospital services to the Indians and Eskimos across Canada and to other elements of the population in the Yukon and Northwest Territories; government employee health services; and a system of grants to the provinces for professional welfare training, welfare research and general welfare services. The Department also acts as co-ordinator of the international welfare activities in which Canada is engaged.

The Medical Research Council reports to Parliament through the Minister of National Health and Welfare.

National Library.—The National Library came formally into existence on Jan. 1, 1953, with the proclamation of the National Library Act (RSC 1952, c. 330). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the *National Union Catalogue*, which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. The Library's own bookstock now totals about 400,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Parole Board.—The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1953, c. 38) by which it is given absolute jurisdiction over all matters of parole, except that in respect of commuted death sentences it may only recommend rather than approve parole. It is composed of a chairman and four members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Solicitor General of Canada.

Department of National Revenue.—From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation Division is responsible for the assessment and collection of income taxes, gift tax, old age security tax, Part I of the Canada Pension Plan, and estate taxes for Canada and all provinces, with certain exceptions, through its 29 district taxation offices and its Taxation Data Centre.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board.

Office of the Chief Electoral Officer.—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1960, c. 39, and amendments thereto), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to Parliament, the Secretary of State acting as spokesman for him in the Cabinet and the House of Commons.

Office of the Representation Commissioner.—This office was established in 1963 under the provisions of the Representation Commissioner Act (SC 1963, c. 40). The Representation Commissioner is responsible for preparing maps showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province. It is also the Representation Commissioner's continuing responsibility to discharge his several duties pursuant to the provisions of the Canada Elections Act. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

Privy Council Office.—For administrative purposes, the Privy Council Office is regarded as a Department of Government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sects. 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the government of Canada to be styled the Queen's Privy Council for Canada. In 1940, upon the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and First Secretary to the Cabinet. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Cabinet Secretariat with the following divisions reporting to the Clerk of the Privy Council and Secretary to the Cabinet: Deputy Secretary to the Cabinet (Operations); Deputy Secretary to the Cabinet (Plans); Co-ordinator of Federal-Provincial Relations; and Director of the Science Secretariat. Within the Privy Council Office, submissions to the Governor in Council are received, draft orders and regulations prepared, approved Orders are circulated and, in addition, the duties of editing, registering and publishing the federal statutory regulations in Part II of the *Canada Gazette* are carried out. The various secretaries deal with secretarial work for the Cabinet and for Cabinet Committees and interdepartmental committees. This involves the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions; liaison with departments and agencies of the government; and the preparation of material for the Prime Minister.

The Office of the Prime Minister is organized as a Secretariat associated with the Privy Council Office and includes members of the Prime Minister's personal staff responsible for general secretarial duties, the drafting of letters, the arrangement of appointments to interview the Prime Minister or for his public appearances or for the release of his statements on matters of public interest, and assisting the Prime Minister in his parliamentary duties.

Public Archives.—The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and make available to the public a comprehensive collection of historical source material relating to the history of Canada. Major emphasis is placed on official records of the Government and the personal papers of political leaders and other prominent figures. These are supplemented by copies of many records in the British and French archives that relate to Canada, a fine map collection, a historical library, and many prints, paintings and photographs. The Archives operates a large Records Centre in Ottawa which provides accommodation for departmental records that are seldom used and also serves as a sorting centre, preserving papers of long-term interest from obsolete files and marking useless material for destruction. Regional centres are located in Toronto and Montreal. The Archives also operates the Government's Central Microfilm Unit, which is housed in the new National Library and Archives Building.

Under the terms of the Laurier House Act (RSC 1952, c. 163) the Public Archives is responsible for the administration of Laurier House as a museum.

Public Service Commission.—Arrangements were made for civil service appointments under the first Civil Service Act of 1868 but the first Civil Service Commission was created only in 1908. This established the beginnings of the merit system which is today the cornerstone of personnel administration in the Public Service. The Act of 1918 gave the Commission authority to control recruitment, selection, appointment, classification and organization and to recommend rates of pay. The next Civil Service Act, passed in 1961, strengthened the principles of the merit system, clarified the Commission's role in other areas of personnel administration, and gave the staff associations the right to be consulted on matters about remuneration and conditions of employment.

The Public Service Employment Act which came into force on Mar. 13, 1967, redefined the Commission's role as the central staffing agency and extended its authority to the Public Service, covering certain groups of employees exempt from the previous Acts. The Public Service is specified in Schedule A of the Public Service Staff Relations Act. It does not include Crown corporations, such as the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation, the Canadian National Railways and Air Canada. The new Act also reaffirms the merit principle, at the same time permitting delegation of the Commission's authority, although not its responsibility, to Parliament. Under the Act, the Commission was relieved of responsibility for recommending rates of pay and conditions of service to the Government, for classification, and for consultation with staff associations on matters that are now the subject of collective bargaining.

The Public Service Commission reports to Parliament through the Secretary of State.

Department of Public Works.—The Department was constituted in 1867 and operates under the legislative authority of the Public Works Act of Parliament. It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads and bridges and the undertaking of dredging and protection work. Federal Government interest in the Trans-Canada Highway and the Northwest Highway System is also handled by the Department. The Department has six Regional Offices—one each at Halifax, Montreal, Ottawa, Toronto, Edmonton and Vancouver—and District Offices at other key points across the country are also maintained. Departmental organization includes the following Directorates: Planning and Operations Branch, Design, Administrative Services, Financial Services, Personnel Administration, Information Services, Fire Prevention and Legal Services. The Canadian Government Exhibition Commission was transferred in 1968 to the Department of Public Works from the (then) Department of Trade and Commerce.

Department of Regional Economic Expansion.—This Department was established under the Government Organization Act, 1969 (SC 1968-69, c. 28) which received Royal Assent on Mar. 28, 1969. Its function is to ensure that economic growth is dispersed widely enough across Canada to bring employment and earning opportunities in the slow-growth regions as close as possible to those in the other parts of the country, without interfering with a high over-all rate of national growth. The legislation authorizes the Department, in co-operation with provincial governments and other federal agencies, to prepare development plans and programs designed to meet the special needs of particular areas. The main components of the Department previously existed within the framework of the Department of Forestry and Rural Development but certain financial changes were made by the 1969 legislation; the Department's operations are to be conducted on the basis of annual Parliamentary appropriations. The functions of the Area Development Agency, formerly under the Minister of Industry, have been absorbed into the new Department which has also become responsible for programs under the Prairie Farm Rehabilitation Act (PFRA), the Agricultural and Rural Development Act (ARDA), the Maritime Marshlands Rehabilitation Act and the Atlantic Provinces Power Development Act. An Atlantic Development Council has been established to advise the Minister on the whole range of programs and policies for fostering economic expansion and social adjustment in the Atlantic region; this Council replaced the Atlantic Development Board, a Crown corporation that previously administered a fund to defray the expenses of planning and of projects initiated for the stimulating of growth in that area.

The Minister of Regional Economic Expansion reports to Parliament for the Cape Breton Development Corporation and the National Capital Commission.

Royal Canadian Mounted Police.—The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North-West Mounted Police. It now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with the governments of eight provinces (all provinces except Ontario and Quebec) it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. A Commissioner, appointed by the Governor in Council, has the control and management of the Force and of all matters connected therewith; he functions under the direction of the Solicitor General of Canada.

Department of the Secretary of State.—The duties, powers and functions of the Secretary of State of Canada extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence

and the custody of State records and documents; the encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, archives, historical resources, museums, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to the administration of the following branches: Citizenship; Citizenship Registration; Education Support; State Protocol; and Translation Bureau.

The Secretary of State reports to Parliament for the Canadian Film Development Corporation, the National Arts Centre Corporation, the National Film Board, the National Library, the Public Archives and the National Museums of Canada. He is spokesman in the Cabinet and the House of Commons for the Canada Council, the Canadian Broadcasting Corporation, the Canadian Radio-Television Commission, the Company of Young Canadians, the Public Service Commission, the Office of the Chief Electoral Officer, the Office of the Representation Commissioner, and the Secretariat on Bilingualism.

Department of the Solicitor General.—Before 1936, the Office of the Solicitor General was either a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did not exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The Solicitor General Act, 1945 (RSC 1952, c. 253) re-established the Solicitor General as a Cabinet officer and provided that "...The Solicitor General shall assist the Minister of Justice in the Counsel work of the Department of Justice, and shall be charged with such other duties as are at any time assigned to him by the Governor-in-Council". This legislation was repealed by the Government Organization Act, 1966 (SC 1966, c. 25), which created a new Department of the Solicitor General and assigned to the Solicitor General of Canada responsibility for the Royal Canadian Mounted Police and the Canadian Penitentiary Service. The Solicitor General also reports to Parliament for the National Parole Board, which is an independent agency. With this new legislation, the Solicitor General of Canada becomes the Cabinet Minister with primary responsibility in the fields of correction and law enforcement.

Department of Supply and Services.—The Department of Supply and Services was established Apr. 1, 1969, by the Government Organization Act, 1969. The Department provides most of the common services, except accommodation, legal services and telecommunications, required by the departments and agencies of the Federal Government. Its creation marks the acceptance of many of the recommendations of the Royal Commission on Government Organization.

The Supply component of the Department is responsible for the following for all Federal Government departments and many Crown corporations: (1) the purchase of goods and services; (2) the provision of goods and related services with the exception of those essential for the conduct of military operations; and (3) the provision of printing and publishing services. The Supply component also acts as the purchasing agent for the purchase of Canadian goods and services required by our allies and other countries.

The Services component, on behalf of the Minister of Supply and Services who is also the Receiver General for Canada, provides payment or cheque issue services to all departments of Government, and also maintains the fiscal accounts of Canada and prepares the public accounts. In addition, the Services component provides departments and agencies of the Government of Canada with a broad range of consulting, data-processing and auditing services on request and a number of operational services through the provision of accounting statement preparation services, pay, superannuation and other employee benefit plan administrative services.

Tariff Board.—Constituted in 1931, the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 53, as amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from customs duties or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise Division, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal on questions of law to the Exchequer Court of Canada.

Tax Appeal Board.—The Tax Appeal Board (created in 1946 as the Income Tax Appeal Board) now operates under the Income Tax Act (RSC 1952, c. 148, as amended). The Board is declared by statute to be a court of record and has jurisdiction to hear and determine appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal from that

court to the Supreme Court of Canada. The Board consists of a chairman, an assistant chairman and four other members. Its offices are located at Ottawa and it hears appeals at the principal centres throughout Canada approximately twice a year and at the main centres, such as Montreal and Toronto, six times a year. The Board is under the jurisdiction of the Minister of National Revenue but is independent of the Department of National Revenue.

Department of Transport.—The Department was created on Nov. 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of two main Services—Marine and Air. Marine Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection, the Canadian Coast Guard, and direct supervision over 300 public harbours; 11 other harbours come under the supervision of the Department but are administered by commissions. Air Services cover the operation of the Civil Aviation, Airports and Field Operations, Construction Engineering and Architectural, and Meteorological Branches.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: Air Canada, the Canadian Transport Commission, the National Harbours Board, the St. Lawrence Seaway Authority and the Canadian National Railways.

Treasury Board.—The Treasury Board was first established as a committee of the Queen's Privy Council for Canada by Order in Council PC 3 of July 2, 1867, and was made a statutory committee in 1869. The Minister of Finance was appointed Chairman of the Board, with four other Privy Councillors to be designated as members by the Governor in Council. The Secretary of the Board and the members of his staff were personnel employed by the Department of Finance.

By the Government Organization Act, 1966 (SC 1966, c. 25) the Board Secretariat was established as a separate department of government with its own Minister, the President of the Treasury Board. The Board itself was increased to six members: the President, five Privy Councillors and, ex officio, the Minister of Finance.

Amendments to the Financial Administration Act (RSC 1952, c. 116), passed in 1966, defined more clearly the Treasury Board's responsibilities as the central management agency of government. These responsibilities include expenditure control, including allocation of resources among departments and agencies of government; the management of the personnel function in the Public Service; and the improvement in the efficiency of management and administration in the Public Service.

The staff of the Treasury Board is divided into three Branches: the Management Improvement Branch provides the leadership and stimulus to improve management and administrative performance within departments and agencies of the Federal Government; the Personnel Policy Branch is responsible for the classification of positions, the rates of pay, conditions of employment and for representing the Government in collective bargaining with bargaining agents representing employees in the Public Service; and the Program Branch is responsible for such matters as the financial management functions of short- and long-range expenditure forecasting, program analysis, expenditure control and estimates preparation.

Department of Veterans Affairs.—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board established by the War Veterans Allowance Act (RSC 1952, c. 340) also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of urban centres. It also maintains, in large cities across Canada, administrative offices, which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

War Veterans Allowance Board.—This Board, established under the authority of the War Veterans Allowance Act, 1930 (RSC 1952, c. 340, as amended) is a quasi-judicial body consisting of ten members including a chairman and a deputy-chairman, appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act. It reports to Parliament through the Minister of Veterans Affairs. Its functions include the responsibility of ensuring that the 19 District Authorities, located in various regions throughout Canada, interpret the legislation in a fair, reasonable and equitable manner. It is also an appeal body which may consider the appeal of an appellant against the decision of a District Authority.

Section 3.—Crown Corporations

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

Agricultural Stabilization Board.—The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act. The Board reports to Parliament through the Minister of Agriculture and routine administrative matters are handled through departmental channels.

Air Canada.—Formerly Trans-Canada Air Lines, the Corporation was incorporated by Act of Parliament in 1937 to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside of Canada. Air Canada now maintains passenger, mail and commodity traffic services over nation-wide routes and also services to the United States, England, Scotland, Ireland, France, Switzerland, West Germany, Austria, Denmark, the U.S.S.R., Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. Air Canada is responsible to Parliament through the Minister of Transport.

Atomic Energy Control Board.—By Act of Parliament (RSC 1952, c. 11) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

Atomic Energy of Canada Limited.—This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities of the company are (a) the development of economic nuclear power, (b) scientific research and development in the atomic energy field, (c) the operation of nuclear reactors and (d) the production of radioactive isotopes and associated equipment such as Cobalt-60 beam therapy units for the treatment of cancer. The company reports to Parliament through the Minister of Energy, Mines and Resources.

Bank of Canada.—Legislation of 1934 (RSC 1952, c. 13, as amended by RSC 1952, c. 315; SC 1953-54, c. 33; and 1966-67, c. 88) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors appointed by the Government and composed of a governor, a deputy governor and 12 directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 109.)

The Canada Council.—Established by Order in Council dated Apr. 15, 1957, this corporation, composed of a chairman, a vice-chairman and 19 other members, a director and an associate director, operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of the Council is to encourage the arts, humanities and social sciences in Canada, mainly through a broad program of fellowships and grants. Its principal sources of income are an annual grant of the Canadian Government, which amounted to \$20,580,000 for the year ending Mar. 31, 1968, and an Endowment Fund, originally of \$50,000,000, which has an annual yield of approximately \$3,500,000. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Secretary of State. (See footnote, p. 109.)

Canada Deposit Insurance Corporation.—The Corporation was established by legislation (SC 1966-67, c. 70), which received Royal Assent on Feb. 17, 1967. It is empowered to insure Canadian currency deposits other than those of Canada, up to \$20,000 per person, in banks, federally incorporated trust and loan companies that accept deposits from the public, and in similar provincially incorporated institutions that are authorized by their provincial governments to apply for such insurance. The Corporation is also empowered to act as a lender of last resort for member institutions. The Board of the Corporation comprises a chairman, appointed by the Governor in Council, and four other directors who hold the positions of Governor of the Bank of Canada, Deputy Minister of Finance, Superintendent of Insurance and Inspector General of Banks.

Canadian Arsenals Limited.—This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945, and is subject to the Government Companies Operation Act (RSC 152, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plants and equipment. It has

extensive facilities for the manufacture of small arms and ammunition components as well as for the filling and assembly of artillery ammunition, mines, bombs, grenades, rockets and other specialties up to torpedo warheads. The Head Office of the Company is in Ottawa, the Small Arms Division is at Long Branch, Ont., and the Filling Division at St. Paul l'Ermite, Que. The company reports to Parliament through the Minister of Supply and Services.

Canadian Broadcasting Corporation.—The CBC functions under the Broadcasting Act, 1968, which continues the Corporation as a Crown agency charged with the operation of a national broadcasting service. It has authority among other things to maintain and operate broadcasting undertakings and to originate and secure programs from within or outside Canada. Its radio and television services are financed through Parliamentary grants, supplemented by revenues from commercial operations. The Corporation reports to Parliament through the Secretary of State.

The Corporation consists of a president and 14 other directors appointed by the Governor in Council. The President is appointed for a term not exceeding seven years and is eligible for reappointment. Directors are appointed for periods not exceeding five years and may serve two consecutive terms. The President is the chief executive officer of the Corporation. The Executive Vice-President is responsible to the President for the management of broadcasting operations in accordance with policies prescribed by the Corporation.

The Corporation's Head Office is situated in Ottawa. The production centre for English Networks is located in Toronto and for French Networks in Montreal. The main regional production centres are in St. John's for Newfoundland, Halifax for the Maritimes, Ottawa for the Ottawa Area, Winnipeg for the Prairies, and Vancouver for British Columbia. Headquarters for the Northern and Armed Forces Services is in Ottawa. The operational centre for the CBC International Service is in Montreal.

Canadian Commercial Corporation.—Established in 1946 by Act of Parliament, the Canadian Commercial Corporation is wholly owned by the Government of Canada. Initially it assumed the undertakings of the then Canadian Export Board covering procurement in Canada of goods and services on behalf of foreign governments and United Nations relief agencies. In 1947 responsibility for procurement of the requirements of the Department of National Defence was transferred from the Department of Reconstruction and Supply to the Corporation which fulfilled these additional functions until the formation of the Department of Defence Production in 1951. In 1963 the staff of the Corporation was integrated with that of the Department of Defence Production, now the Department of Supply and Services, which provides all the management and services required by the Corporation.

The Corporation continues to act primarily as the Canadian Government contracting and procurement agency on behalf of foreign countries desirous of purchasing defence or other supplies and services from Canada on a government-to-government basis. It reports to Parliament through the Minister of Supply and Services.

Canadian Dairy Commission.—This Commission, which reports to Parliament through the Minister of Agriculture, was established on Dec. 2, 1966 (SC 1966, c. 34) to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality. The Commission has three members appointed by the Governor in Council and operates with the advisory assistance of a nine-member Consultative Committee appointed by the Minister.

Canadian Film Development Corporation.—This Corporation, established by Act of Parliament in March 1967 (SC 1966-67, c. 78) has the function of fostering and promoting the development of a feature film industry in Canada through investment in productions, loans to producers, grants to film-makers and film technicians, and advice and assistance in distribution and administrative matters. It works in co-operation with other federal departments and agencies and with provincial departments and agencies having like interests and finances its operations from a film development advance account in the Consolidated Revenue Fund. The Corporation has six members appointed by the Governor in Council for terms, initially, of from three to five years and reports to Parliament through the Secretary of State.

Canadian Livestock Feed Board.—The Canadian Livestock Feed Board is a Crown corporation established pursuant to the Livestock Feed Assistance Act (SC 1966, c. 52). The objects of the corporation are to ensure that sufficient feed grain and storage for feed grain is available to meet the needs of livestock feeders and to ensure reasonable stability and fair equalization of feed grain prices in Eastern Canada and in British Columbia. Its powers include authority to make payments related to the cost of feed grain storage and transportation costs to attain its objectives. It may also buy, transport, store and sell feed grains in Eastern Canada and British Columbia when authorized by the Governor in Council.

The Board consists of a chairman, a vice-chairman and two members, and it reports to Parliament through the Minister of Agriculture. There is also an Advisory Committee made up of seven members.

Canadian National Railways.—The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949, the Temiscouata Railway in 1950, and the Hudson Bay Railway and the Northwest Communication System in 1958. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a chairman and board of directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation.—This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Communications.

Canadian Patents and Development Limited.—This Crown corporation was set up in 1947 pursuant to authority granted in an amendment to the Research Council Act passed in 1946. The purpose of the company, which is a subsidiary to the National Research Council, is to patent and licence new products and processes that come out of NRC research, research of other government departments and agencies, and research of Canadian universities. Proposals for patents are assessed with regard to originality, existence of similar patented products or processes, commercial appeal, humanitarian or scientific value, and cost of developing, promoting and marketing. CPDL initiates and finances the development of many inventions to a stage where it is economically possible for private industry to carry them through to production and sale, thus bridging the gap between research and industry. Profits from inventions are used to sponsor less profitable but often more beneficial inventions, such as highly specialized surgical or scientific instruments.

The company reports to Parliament through a designated Minister, at present the President of the Treasury Board who is also Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

Canadian Wheat Board.—The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 109). It reports to Parliament through the Minister of Industry, Trade and Commerce.

Cape Breton Development Corporation.—By agreement between the Governments of Canada and Nova Scotia, this Crown Corporation was established by Act of Parliament (SC 1967, c. 6), assented to on July 7, 1967. Its functions are first to acquire the interests of the major coal producer in the Sydney coalfield and then to reorganize and operate the mines with a view to the rationalization of coal production therefrom and the progressive withdrawal of the Corporation from such production in accordance with a plan to be submitted for the approval of the Governor in Council within one year. The plan should take into account progress in providing employment outside the coal-producing industry and in broadening the base of the Island's economy.

The Corporation consists of a Board of Directors comprised of a chairman and a president appointed by the Governor in Council after consultation with the Lieutenant-Governor in Council of Nova Scotia, and five other directors, two of whom are appointed on the recommendation of the Lieutenant-Governor in Council of Nova Scotia. The Corporation is responsible to Parliament through the Minister of Regional Economic Expansion.

Central Mortgage and Housing Corporation.—This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953-54, c. 23, as amended), the Corporation insures mortgage loans made by approved lenders and makes direct loans for new and existing homeownership housing, new rental housing and existing home-ownership and rental housing in designated urban renewal areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects and land assembly developments under federal-provincial arrangements; offers loans and subsidies for public housing projects; makes loans for land assembly projects to be

used for public housing; makes loans to non-profit housing companies for low-rental housing projects; makes loans for students' housing projects and to provinces and municipalities for sewage treatment projects designed to eliminate water and soil pollution; makes contributions and loans to provinces and municipalities for urban renewal operations; conducts housing research; encourages urban planning and owns and manages rental housing units including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. The Corporation is responsible to Parliament through a Minister without Portfolio in charge of Housing.

Company of Young Canadians.—The Act establishing this corporation (SC 1966, c. 36) was assented to on July 11, 1966. The corporation consists of a Council of the Company and persons who are volunteer-members. The Council has 15 members, 10 of whom are elected by the volunteer-members and five of whom are appointed by the Governor in Council. Term of office for both elected and appointed members is three years. The Act provides for the establishment of an Interim Council of not more than 20 members to hold office until the members of the Council are elected or appointed. The objects of the Company are to support, encourage and develop programs for social, economic and community development in Canada or abroad through voluntary service. The corporation reports to Parliament through the Secretary of State.

Crown Assets Disposal Corporation.—This Corporation was established in 1944 as the War Assets Corporation under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). It replaced the War Assets Corporation Limited which had been incorporated in 1943 and its name was changed to Crown Assets Disposal Corporation in 1949. The Corporation is responsible for the sale of Federal Government surplus real estate and commodities located in Canada and at Canadian Government establishments throughout the world. It also acts as agent on behalf of foreign governments in selling their surplus assets located in Canada and has reciprocal agreements with a number of European countries for marketing Canadian surplus assets located in their respective countries. The Corporation is responsible to Parliament through the Minister of Supply and Services.

Defence Construction (1951) Limited.—Defence Construction (1951) Limited, reporting to the Minister of National Defence, is the Crown agency that procures for the Department of National Defence the construction and repair of buildings, structures and engineering works and professional engineering and architectural services.

The forerunner of the present company, Defence Construction Limited, began its operation in November 1950 as a Crown agency responsible for awarding and supervising defence construction projects. Defence Construction (1951) Limited, incorporated July 12, 1951, under authority of the Defence Production Act, took over the responsibilities of the former agency. The company reported to the Minister of Trade and Commerce until Apr. 1, 1951, and from that date until Apr. 22, 1965 it reported to the Minister of Defence Production; it is now under the control and supervision of the Minister of National Defence.

The company's prime responsibility in carrying out all new construction and repair and renovation projects (except work under \$10,000 which is contracted for by the Department of National Defence via the Department of Supply and Services) includes: participation in preparation of design; calling and reviewing of tenders; award and administration of contracts; supervision of construction work; and certification of progress claims for work completed. Activities cover four distinct spheres: defence projects in Canada for the Department of National Defence; all defence projects in Europe for the Department of National Defence under the North Atlantic Treaty Organization Agreement; defence construction for the United States Government in Canada; and, by arrangement, acting as the contract agents or technical advisers on the rendering of assistance to other federal departments and agencies.

In addition to the head office located at Ottawa, branch offices are maintained at Halifax, Montreal, Toronto, Winnipeg and Vancouver in Canada and in Lahar, Germany.

Director of Soldier Settlement and Director of the Veterans' Land Act.—The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Coal Board.—The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The Chairman has the status of a Deputy Minister and the Board reports to Parliament through the Minister of Energy, Mines and Resources. The Board administers transportation and other subventions relating to coal and also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended).

Eastern Rockies Forest Conservation Board.—The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the

Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the major tributaries of the Saskatchewan River. Its function is to determine the policy necessary to obtain the greatest possible flow of water in the Saskatchewan River system. The planning of programs of forest use and conservation is a joint duty of the Board and the provincial Forest Service; the administration of the conservation area is a function of the province. In April 1962, a Technical Co-ordinating Committee for Watershed Research was established to undertake study of the related needs defined by the Board. The Committee's programs, undertaken by seven co-operating agencies of the Federal and Alberta Governments, are co-ordinated by an officer of the federal Department of Fisheries and Forestry.

Funds for capital expenditures during the first seven years of the agreement were provided by the Federal Government with maintenance expenditures being paid by the Province of Alberta. In 1955 the province undertook the responsibility of financing both capital improvements and maintenance work. Currently, one member of the three-man Board is appointed by the Federal Government and the province has the right to appoint two members. The choice of one of the three members as Board chairman is vested in the province. The Board reports to Parliament through the Minister of Fisheries and Forestry. (See footnote, p. 109).

Economic Council of Canada.—This corporation, established under legislation passed on Aug. 2 1963 (SC 1963, c. 11), consists of a full-time chairman and two full-time directors appointed for a term not to exceed seven years and not more than 25 additional members to serve part-time and without remuneration. The Council is to be as representative as possible of labour, agriculture and primary industries, secondary industry and commerce, and the general public. Its functions are to advise and recommend measures that will achieve in Canada the highest possible levels of employment and efficient production so that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to carry on the duties of the former National Productivity Council which were to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity; and to publish an annual review of medium- and long-term economic prospects and problems. The Council reports to Parliament through the Prime Minister.

Eldorado Aviation Limited.—This company was incorporated Apr. 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Energy, Mines and Resources.

Eldorado Nuclear Limited.—Set up in 1944 under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted in June 1952 and the name changed in 1968), the company's business is the mining and refining of uranium and the production of nuclear fuels in Canada. The company has also entered into contracts for the purchase of uranium concentrates from private producers in Canada. It reports to Parliament through the Minister of Energy, Mines and Resources.

Export Credits Insurance Corporation.—This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors (including the Deputy Minister of Industry, Trade and Commerce and the Deputy Minister of Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporters against non-payment by foreign buyers arising out of credit and political risks involved in foreign trade. The Corporation is also authorized to provide financing in respect of an export transaction involving extended credit terms. It reports to Parliament through the Minister of Industry, Trade and Commerce.

Farm Credit Corporation.—This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporation also administers the Farm Machinery Syndicates Credit Act and is responsible to Parliament through the Minister of Agriculture.

Fisheries Prices Support Board.—The Board was set up under the Fisheries Prices Support Act of 1944 (RSC 1952, c. 120) to recommend to the Government price support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and Forestry and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fishery products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

Freshwater Fish Marketing Corporation.—This Corporation was established under the Freshwater Fish Marketing Act (SC 1968-69, c. 21) which received Royal Assent on Feb. 27, 1969, and given the function of marketing and trading in fish, fish products and fish by-products in and out of Canada with the objective of ensuring more orderly marketing for the benefit of the whole fishery and achieving higher and more stable prices for the catch. The Corporation receives a grant for initial operating and establishment expenses but will conduct its operations on a self-sustaining basis without Parliamentary appropriations; it will be financed by bank loans with gov-

ernment guarantee of repayment or by direct loans. The Corporation consists of a Board of Directors composed of a chairman, a president, one director for each participating province and four other directors appointed by the Governor in Council for a term not exceeding five years. The Corporation reports to Parliament through the Minister of Industry, Trade and Commerce.

Industrial Development Bank.—The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to provide loans to industrial enterprises where financing is not available through recognized lending organizations. (See footnote, p. 109.)

Medical Research Council.—Established in November 1960, this Council operates as a virtually autonomous agency. It is composed of a chairman, a secretary and 21 members who serve for a three-year term, renewable once. The primary aim of the Council is the development of medical research and the support of medical research workers in the university centres of Canada. It reports to Parliament through the Minister of National Health and Welfare.

National Arts Centre Corporation.—The Act establishing this Corporation (SC 1966, c. 48) was assented to July 15, 1966. The Corporation consists of a Board of Trustees composed of a chairman, a vice-chairman, the Mayors of Ottawa and Hull, the Director of the Canada Council, the President of the Canadian Broadcasting Corporation, the Government Film Commissioner and nine other members appointed by the Governor in Council for terms not exceeding three years, except for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the National Capital Region and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

National Battlefields Commission.—This Commission was established by Act of Parliament in 1908 to preserve the Historic Battlefields at Quebec City. The Commission is composed of nine members, seven appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by annual appropriations of the Federal Government and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

National Capital Commission.—This Commission is a Crown agency created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federal District Commission. The Commission is served by a full-time paid chairman and comprises a total of 20 members representative of the ten provinces of Canada. Its work force fluctuates between 600 and 850, depending on the season.

Co-ordination and development of public lands in the National Capital Region are undertaken by direct planning and construction by the Commission's staff; by co-operation with municipalities; by provision of planning aid or financial assistance in municipal projects; and by advising the Department of Public Works on the siting and appearance of all Federal Government buildings in the 1,800-sq. mile National Capital Region. The Commission reports to Parliament through the Minister of Regional Economic Expansion.

National Gallery of Canada.—The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquess of Lorne, then Governor General, had recommended and assisted the founding of the Academy. One of the three tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. By Act of Parliament in 1913, re-enacted in 1951, the National Gallery was placed under the management of a Board of Trustees appointed by the Governor General in Council and operated under the National Gallery Act (RSC 1952, c. 186). In 1968 the National Gallery became a component part of the National Museums of Canada which are governed by a Board of Trustees responsible to Parliament through the Secretary of State.

The first charge of the National Gallery is the development, care and display of the national art collections and the encouragement of the interest of the Canadian public in the fine arts. Its services to the public include a large reference library on the history of art and related subjects; Education and Publications Extension Divisions through which travelling exhibitions, lectures and the showing of art films, and guided tours of the Gallery at Ottawa are conducted; the production of art publications and reproductions; and a National Conservation Research Laboratory.

National Harbours Board.—The Board was established by Act of Parliament in 1936. It is responsible for the administration of port facilities at the harbours of St. John's, Nfld.; Halifax, N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois-Rivières and Montreal, Que.; Vancouver, B.C.; and Churchill, Man.; the Jacques Cartier and Champlain Bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

National Research Council of Canada.—This is an agency of the Canadian Government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support to research carried out in Canadian university and industrial laboratories; sponsors Associate Com-

mittees co-ordinating research on specific problems of national interest; and develops and maintains the nation's primary physical standards. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited (see p. 1300). The National Research Council consists of a president, three vice-presidents, and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the Research Council Act (RSC 1952, c. 239, as amended), and reports to Parliament through a designated Minister, at present the President of the Treasury Board, who is also Chairman of the Privy Council Committee on Scientific and Industrial Research.

Northern Canada Power Commission.—The Commission was established by Act of Parliament in 1948 (RSC 1952, c. 196) to provide power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give the Commission authority to provide similar services in the Yukon Territory. The name of the Commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of the Deputy Minister of Indian Affairs and Northern Development, who is chairman, and two members appointed by the Governor in Council and reports to Parliament through the Minister of Indian Affairs and Northern Development.

The Commission operates three hydro-electric plants in the Northwest Territories (two on the Snare River near Yellowknife and one on the Taltson River near Fort Smith) and two hydro plants in the Yukon Territory (one on the Yukon River at Whitehorse and the other on the Mayo River near Mayo). Diesel-electric plants and distribution systems are operated at Fort Smith, Fort Simpson, Fort Resolution and Cambridge Bay, N.W.T., at Dawson, Y.T. and at Field, B.C.; diesel-electric power and central heating plants at Inuvik and Frobisher Bay, N.W.T., and at Moose Factory, Ont.; and water supply and sewerage systems at Inuvik and Moose Factory. The Commission also operates in the Northwest Territories, on behalf of the Department, diesel-electric plants at Fort McPherson and Aklavik, and heating plants and domestic water supply and sewerage systems at Fort McPherson and Fort Simpson.

Northern Transportation Company Limited.—This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a Company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed and western Arctic. The Company is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

Polymer Corporation Limited.—This Corporation was incorporated in 1942 by Letters Patent and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial Administration Act (RSC 1952, c. 116.) Its head office and main plant are located at Sarnia, Ont., where it produces synthetic rubbers, latices, resins and related products. A subsidiary operation for the production of butyl is located in Belgium, and another subsidiary in France is responsible for production of general purpose and specialty rubbers for the European market. An international marketing subsidiary is located in Switzerland. The Company reports to Parliament through the Minister of Supply and Services.

Royal Canadian Mint.—The Royal Canadian Mint has been in operation since 1908. It was first established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, and opened on Jan. 2, 1908. On Dec. 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. In 1969, under the Government Organization Act (SC 1968-69, c. 27), the Mint became a Crown agency corporation, reporting to Parliament through the Minister of Supply and Services.

The latter change was made to provide for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and other precious metals; and producing medals, plaques and other devices. The Mint has a seven-man Board of Directors appointed by the Governor in Council—the Master of the Mint who is its chief executive officer appointed to serve during pleasure, the Chairman who is appointed for a four-year period subject to re-appointment, and five other Directors, two from inside and three from outside the Public Service, who are appointed for terms of one to three years. The Mint now operates basically as a manufacturing enterprise, with the object of making a small profit. Financial requirements are provided through loans from the Consolidated Revenue Fund.

Science Council of Canada.—The Act establishing the Science Council of Canada (SC 1966, c. 19) received assent on May 12, 1966. The Council consists of 25 members each having a specialized interest in science or technology and four associate members chosen from among officers or employees of the Federal Government. Members hold office for not more than three years and associate members hold office during pleasure. All are appointed by the Governor in Council. The

duties of the Science Council are to assess in a comprehensive manner Canada's scientific and technological resources, requirements and potentialities and to make recommendations thereon. The Council reports to Parliament through the Prime Minister.

St. Lawrence Seaway Authority.—The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Crown corporation, Seaway International Bridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority is composed of a president, a vice president and a member, and reports to Parliament through the Minister of Transport.

Unemployment Insurance Commission.—The Commission was established under the provisions of the Unemployment Insurance Act, 1940, now the Unemployment Insurance Act, 1955 (SC 1955, c. 50). It is responsible for the administration of the Unemployment Insurance Act and for such other duties and responsibilities as the Governor in Council, on the recommendations of the Minister of Labour, requires. Its general functions are to provide for the compulsory insurance of employed persons with certain exceptions and, subject to regulations, to provide such persons with weekly payments for limited periods if they become unemployed.

The Commission has three commissioners, one of whom is the chief commissioner, and operates at three levels—a head office in Ottawa, five regional offices, and a number of area offices across the country. It reports to Parliament through the Minister of Labour.

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